

PLUGGED IN: New column by the LScript master—Bob Hood!

NEW **TEKNIQUES**

April/May 1998

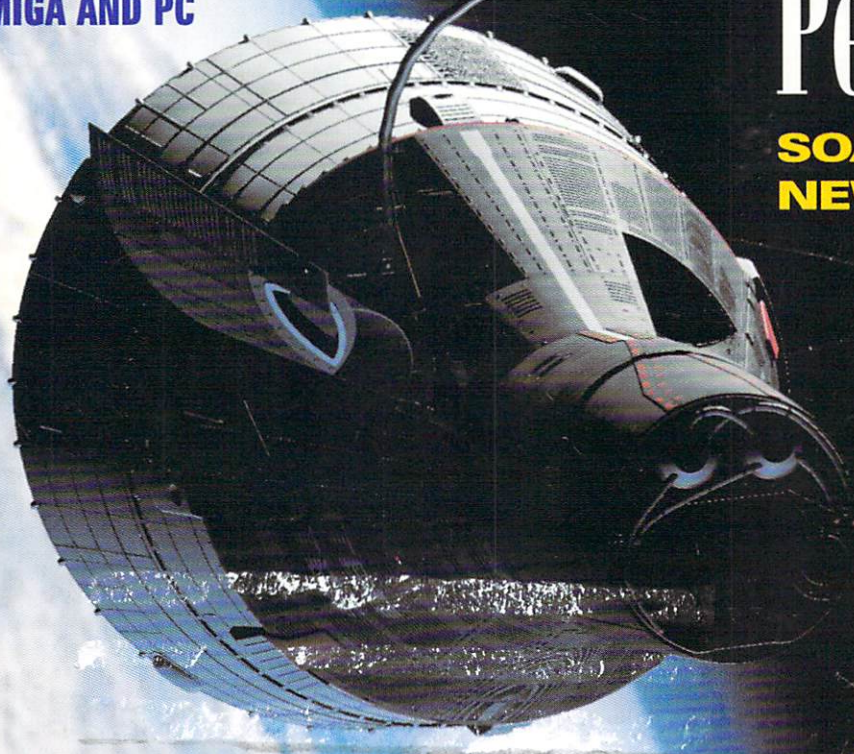
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NewTekNIQUES

C O N T E N T S

Volume 2, No. 2, April/May 1998



FEATURE STORY

page 22

Flyer Personalities:
Soaring to
New Heights
by Dick De Jong
and Molly Dinkins



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by Jon Carroll

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Pages 44-48.



John Gross has read the perspective of others on pursuing your Hollywood dream. Now he gives you his perspective! Page 32.

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by Mojo

ON THE COVER:

This issue's cover was designed by the crew at Area 51, who recently completed effects work for Tom Hanks' "From The Earth to The Moon." The image is a LightWave 3D frame from a space walk that occurs in the first episode, "Can We Do This?"



TekMasters

THE VISUALIZER
Mike Peraza Breathes
Life into Anastasia.



page 18

DEPARTMENTS

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NewTek is hot, with two new products in as many months, the latest being a high-end paint program.

Premieres 6
From sharks to explosions, the latest products are here.

Short Takes 12
TROOPS is one of the hottest underground videos on the market. Find out how LightWave 3D played a role.

Renders 52, 66
Thought one page of Renders was too small? We give you two in this issue!

REVIEWS

- GenesisVFX 42**
by Mike Massee
- Inspire 3D 43**
by Jean-Eric Henault

Joe Tracy gives it to you straight in his first "State of the Flyer Address."
Page 34.

LightWave 3D Plug-Ins from the Plug-In Experts.

RealTools



RealTools... just what every animator has been waiting for! This collection of 16 LightWave plug-ins from Dynamic Realities includes:

Soft Reflections: A shader that allows realistic blending of shadows and can change a surface's reflectivity and transparency based on the brightness of the reflection. There is also a distance falloff option. The image above is an example of this superb shader.

Lighter: One of the most advanced lighting engines for LightWave available! It allows selective inclusion and exclusion of lights, phase shifting the light, and changing the contrast of the surface's terminator. You can also have a surface transmit light (i.e. paper).

Fresnel Shader: Controls for contrast and bias, surface modifications, and value limiting give this Fresnel shader the ability to create some of the most sophisticated effects ever seen, including pen and ink effects!

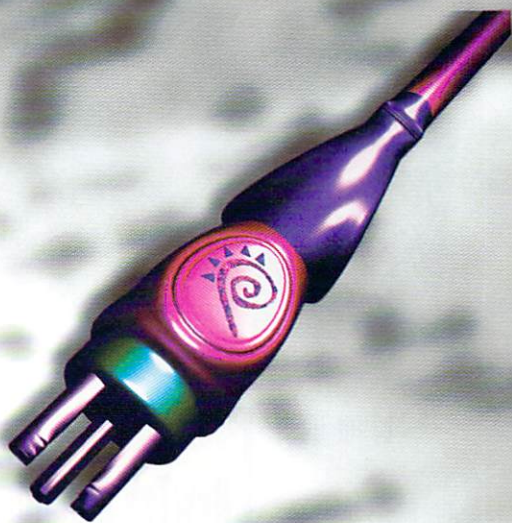
Pencil Shader: This shader adds custom lines over the top of an image for that hand-drawn look.

Shadow Blend: Ease the frustrations of compositing! This plug-in eliminates the need for front-projection mapping of shadows in CGIs.

Also included: *Video Lines, Video Noise, Brightness and Contrast Controls, QTVR Panorama, Ortho-VU, Front/Top/Side Views, Layout Distance Tools, Object Replacement, VistaPro Script Read/Write, Parenting, and PointString.*



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FRACTALIZER

Tired of the same old look to your objects? Well, now you can spice them up with **Fractalizer** from Dynamic Realities! Make dirty surfaces, electric sparks, plasma, rust, and more with this new fractal noise shader. The features include:



Five Color Spectrum: Allows easy and intuitive changing of the cloud size and the contrast between multiple colors. By applying the spectrum, you can obtain the effect of electric sparks.

Radial Falloff: Specify your effect to disappear along the radius.

Fractal Opacity: This feature makes it possible to put the fractal in a precisely defined area on the object. You can obtain many unique effects, like a burned out hole, by applying Fractal Opacity with Fractal Morphing.

Fractal Morphing: Allows obtaining the effect of a changing color or texture without tedious object-by-object morphing. The possibility of changing each parameter gives you full control over the texture morphing.

Keyframeable: All effects and controls are keyframeable for smooth morphs and gradual changes over time.

Fractalizer will give your objects a whole new look!

Dynamic Realities'
software available at



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TekTALK

OUR EDITOR'S OPINIONS ON IMPORTANT NEWTEK ISSUES

BY JOE TRACY

First Inspire 3D and now
Aura. NewTek's policy
is paying off big.

NewTek Making Big Moves NEWTEK'S ONE-TWO PUNCH

If you had told me at the beginning of this year that NewTek would announce and ship two major products within one month of each other, I probably wouldn't have believed it. Yet right on the heels of Inspire 3D (see the review on page 43), NewTek suddenly unleashes Aura—a new high-end PC paint program.

An Aura of Discoveries

To understand Aura, you must first understand NewTek. NewTek does not put out slop and they never have. LightWave 3D speaks for itself (as do the effects on the movies and series it's used on). The Video Toaster Flyer remains the best non-linear solution on the market today (see "Flying High," page 34). Then came Inspire 3D with strong print, graphics, multimedia, and animation functions (not to mention quite a few of the same features as LightWave 3D). But NewTek also threw in an awesome multimedia tutorial CD (3D Interactive) with the Inspire 3D package. Every product NewTek has delivered has been a step towards the future, versus the past.

Enter Aura, a high-end paint package for multimedia, broadcast, animation, and video professionals. Strategically priced at \$595, Aura is time-line driven and perfect for rotoscoping, special effects, adding 3D elements, video layering, chroma keying, and painting, to name a few.

Aura has over 1,500 drawing combinations and supports popular products like Photoshop. It even works with AVI files and allows real-time painting on video, animations, or even Web productions. You can also cut elements from video, making them into animated brushes or you can create your own time-line based animations. Aura supports most drawing pads, animation programs, and non-linear editors (ahem, except NewTek's own Flyer!). Do you like the table light onion-skin aid? Aura has it. Want to layer video? No problem. Want to create animated text? It does it.

I have yet to actually sit down and play with

Aura. I was given a demonstration of it a couple of months ago and adding that demonstration to my knowledge of NewTek products has allowed me to draw only one conclusion—this will be one killer product.

Policy Pays Off

NewTek's policy about not announcing a product until it is ready to ship is paying off big time. I used to be very critical of the old NewTek that would announce a product (like the Video Toaster) and deliver it well over a year late. But now NewTek is gaining the respect and reputation as a company that delivers—one that delivers software solutions versus vaporware promises.

From NewTek to NewTechniques

As NewTek continues to introduce new high-end products to the market, *NewTechniques* will be here to cover those products without sacrificing all the great information, tips, and tutorials you've come to expect. In fact, we're adding more! Check out the new "Plugged In" column by the master of LScripts, Bob Hood! He has joined *NewTechniques* as a regular columnist and will discuss all aspects of the scripting language with you throughout the months to come. Also in this issue is two pages of "Renders" (page 52 and 66)! Enjoy and don't forget to fill out the Reader Service card to receive free information (and sometimes discounts and special prices) on the various products in this issue.

NewTechniques

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With New Training Videos for LightWave 5.5 and Photoshop 4.0!

New



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If you use photoshop, you need this tape. Digital artist & instructor Katrin Elsmann reveals amazing time saving tips & techniques for color correction, creative compositing, levels & curves, layers, keyboard shortcuts, hidden commands and much more!

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New

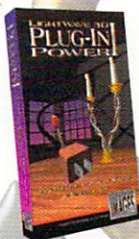


QuickStart 5.5

A complete overview of LightWave 5.5. NewTek's Don Ballance provides fundamental concepts in animation, modeling & surfacing techniques. Includes MetaNURBS tutorial plus a special "update" section for current LightWave users.

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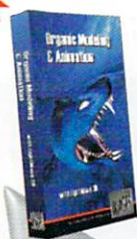


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Discover all you need to know about the amazing new volumetric lighting engine for LightWave 5.5. Create lightbeams, dust clouds, smoke trails and more!

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- *Spacecraft Model Design*
- *Spacecraft Surfacing Techniques*
- *Digital Cinematography*
- *Cinematic Visual Effects*
- *Digital FX Collection CD Rom*

The LightWave 3D Essential Series

Top CGI artist John Gross guides you through the fundamentals of LightWave 3D, cut months off your learning curve. From 3D basics to advanced tips and tricks for creating stunning 3D animation. This series is a must for every LightWave 3D artist

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- *Surfacing Techniques*
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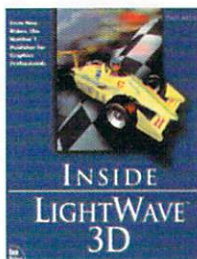
Premieres

NEW PRODUCTS TAKE A BOW ON OUR STAGE

LIGHTWAVE PRODUCTS

Inside LightWave 3D 5.5

Dan Ablan, author of the *LightWave Power Guide*, from New Riders Publishing, has written another LightWave book, *Inside LightWave 3D 5.5*. This book covers LightWave through version 5.5, including MetaNURBS, Character Animation, Morph Gizmo, Lip Syncing, LScript, Cel Animation, Inverse Kinematics, Bones, Plug-ins, Color Theory, Lighting, Radiosity, and more. The book comes with a CD-ROM of exercise files, demo and shareware programs and plug-ins, as well as dozens of sample textures. *Inside LightWave 3D 5.5* is 750 pages and is available through most bookstores.



Circle #189

CgFluid System

The CgFluid System, by Computational Graphics, is a set of two displacement map plug-ins for LightWave 3D, the CgFluid plug-in, and the CgSplash plug-in. CgFluid system allows an animator to create realistic fluid surfaces and splashes, based on the physics of fluids. The CgFluid plug-in is applied to a fluid surface mesh, after which the animator creates pressure on the surface by moving effector nulls in the scene, resulting in ripples, wakes, and waves. When the fluid surface moves upward rapidly, the CgSplash plug-in ejects particles from the surface to create a splashing effect. The system includes the two plug-ins, documentation, plus tutorial and sample LightWave scenes. The CgFluid System is available for Intel and Alpha platforms for LightWave 5.x. Contact Computational Graphics, 4725 Cripple Creek Rd., Fort Worth, TX 76137; <http://home1.gte.net/circ/index.htm>.

Circle #190



The Shark Collection

The Shark Collection Volume 1, from Replica Technology, is a collection of 19 species of Sharks (more than 80 real-world scaled LightWave 3D and Inspire 3D objects). This collection includes species of sharks from 15 families in two major Orders. It features the Great White shark, (Jaws), the order of Mackerel sharks, and contains the Basking, Crocodile, Goblin, Megamouth, Sand Tiger, ShortFin Mako and Thresher sharks. It also features the Great Hammerhead and Tiger sharks, the order of Ground sharks, and contains the Copper, False Cat, Grey Reef, Hound, Pygmy RibbonTail, SnaggleTooth, Swell, Tope and Zambezi sharks.

Each object is ready to render or animate for immediate gratification. Layout example scenes (.LWS files) are included and contain key framed animation, morph targets, skeletal bones and lighting. Each object includes high-res and low-res versions, and also morph targets for facial animation.

Suggested retail price is \$195. For more information, contact Replica Technology at (716) 337-0621 or visit its Web site at www.replica3d.com.

Circle #191

NEW LIGHTWAVE PRODUCTS

Inside LightWave 3D 5.5
The Shark Collection Vol. 1
The LENY CD-ROM Vol. 2
DarkTree Textures

NEW TOASTER/FLYER PRODUCTS

Pyromania Classics
Aussie's Multicam Editor
Mega4000AT
Stealth FlyerWire
Carrera/LightWave bundle
MasterISO 2.0

LENY CD-ROM Volume 2



The LENY CD-ROM Volume 2 (\$49), by Multimedia System Design, features Doug Kelly, author of the best selling *LightWave 3D 5 FX Character Animation*. This one-hour interactive tutorial features tons of information and shows you how to apply classical character animation techniques in LightWave 3D. The LENY CD-ROM Volume 2 is the second release of the LENY CD-ROM set. The first release featured two hours of interactive LightWave tutorials by Ken and Lee Stranahan. Multimedia System Design is the company behind the annual LENY LightWave Expositions.

For more information or to order, call Multimedia System Design at (888) 673-6921 or visit the MSD Web site at www.msd-nyc.com.

Circle #192

INTRODUCING THE NEW 1998 QUIKPAK A4060T POWERTOWER

At first glance, just a new, larger, more stylish case.

But ...

when you release the patented hydraulic door, the PowerTower begins to whet the appetite of Amiga Power Users with a host of standard features and available factory installed options.

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MKE LS120 SuperFloppy
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LIGHTWAVE PRODUCTS

LightWave/Carrera Bundle

Carrera Computers is bundling NewTek's LightWave 3D 5.5 software into its workstations. The first system is an entry-level 533MHz machine with 64MB RAM, 2GB hard disk, 24X CD-ROM, AccelSTAR II graphics card, 100 Mbit Ethernet card, keyboard, mouse, Windows NT 4.0, and LightWave 5.5. The price (not including monitor) is \$4,495. The second system is a higher-end 533MHz machine with 128MB RAM, 4GB hard disk, 24X CD-ROM, Dynamic



Pictures Oxygen 202 graphics card, 100 Mbit Ethernet card, keyboard, mouse, Windows NT 4.0, and LightWave 5.5. The price (not including monitor) is \$5,950.

Also available to those purchasing the system is NewTek's Film Grain and Motion Pack at \$199.

For more information on the LightWave/Carrera bundle, call Carrera Computers at (800) 576-7472 or visit the Carrera Web site at www.carrera.com.

Circle #193

DarkTree Textures

DarkTree Textures (\$265, Windows 95 and NT), by Darkling Simulations, is a next-generation texture generating tool for 3D artists and animators. With DarkTree Textures, you can program your own textures by combining high-level algorithmic texture components. As a focused tool for generating texture maps, DarkTree Textures allows you to create, edit, and organize textures for your projects. With DarkTree Textures' visual programming environment, you can design the surfaces you need to bring realism to your 3D graphics. The algorithmic textures give you exact control, resolution-independent perfection, and the realism of matching color, grayscale, and bump maps.

DarkTree Textures features many ease-of-use features including drag-and-drop, threaded previews, multiple undo/redo, and 75 algorithmic texture components organized into 11 classifications.

For more information on DarkTree Textures, call Darkling Simulations at (505) 672-0640 or visit the Darkling Simulations Web site at www.darksim.com/index.html.

Circle #194

Pyromania Classics

Pyromania Classics for the Amiga and Video Toaster 4000, by VCE, brings all the firepower of top visual effects companies to your productions.



Pyromania Classics contains more than 30 explosive visual effects sequences including explosions, fire, smoke, Zero-G explosions, and depth shockwaves. Individual files in sequence are provided for maximum usage in a variety of programs such as ImageFX, Photogenics or ToasterPaint.

All files are photographed in 35mm motion picture film, scanned at 2k resolution and down sampled to full overscan video resolution. In addition, the Amiga/Toaster version includes sequences in native FlyerClip format and real-time color Toaster effects. Toaster effects may be used real time in your project and FlyerClips can be used for advanced compositing. For more information on Pyromania Classics, call (800) 242-9627. The retail price is \$199.

Circle #195



MasterISO 2.0

MasterISO 2.0 (\$89), by Asimware Innovations Inc., is its next-generation CD-ROM writing software package. MasterISO 2.0 includes a comprehensive File Manager that allows you to assemble and manipulate the entire directory structure to create data discs. The Audio project allows you to create custom audio discs from any audio file (up to 99 files). Several audio formats can be imported and the data is converted on-the-fly during the write operation.

The MasterISO 2.0 engine supports ISO 9660, Rock Ridge, and Joliet file systems. Full control over their respective options is provided. MasterISO 2.0 also supports Amiga-specific Rock Ridge Extensions, allowing for Amiga-friendly CD-ROM discs. Image generation can either be directed to a standard ISO image file or written on-the-fly to a CD-R/RW drive.

For more information on MasterISO 2.0 call Asimware at (905) 575-1042 or visit the Asimware Web site at www.asimware.com.

Circle #196

FLYER PRODUCTS

Aussie's Multicam Editor

OZware, the creators of Co-Pilot Audio and Co-Pilot Video, have released Aussie's Multicam Editor (\$189). Designed to simplify the editing of multiple camera productions on NewTek's Video Toaster Flyer, Multicam is easy to use and even includes a tutorial video by Aussie! Whether the production involves a two-camera wedding, five-camera theater event, or even a 50-camera sporting event, Multicam is capable of synchronizing all of the digitized clips, allowing the producer to jump from one camera shot to the next during the edit session.

Editing is as simple as choosing a camera and selecting an out point, then picking the next camera and the next out point. This can be performed 'live,' as the camera banks are rolling, or you can shuttle ahead to the next edit point, if there is a long portion on one camera (as with lecture videos).

Multicam is available from NewTek dealers everywhere or can be ordered direct from OZware at (360) 805-0148. OZware's Web site is at www.vionline.com/ozware.

Circle #197

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One And Only Media, creators of MacroForm™, proudly introduces **FXtreme™** and **FXtremePRO™**. These groundbreaking plug-ins allow you to create custom mesh deformation effects in LightWave3D™ Layout. The dynamic interface features an interactive OpenGL preview; timeline graph; and a hierarchical action list which allows you to assemble and manipulate your own infinite number of layered effects to any object.

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For availability contact your Lightwave3D dealer or distributor, or you can visit our web site at <http://chelsea.ios.com:80/~oaomedia> for more information, system requirements, and demo software.



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Premieres

FLYER PRODUCTS

Mega 4000AT

DVS Direct announces the Mega 4000AT, an enhanced version of the A4000T. The system eliminates the shortcomings found in the original A4000 Tower, like lack of space and 880KB floppy drives. The MEGA 4000AT is designed to accommodate the entire Flyer system, including the video and audio hard drives, TBCs, etc., without the need for an external drive bay or Octopus cable. This eliminates potential problems caused when using multiple case configurations including ground loops, and video stuttering due to bad SCSI cabling.

The 10-bay case includes multiple cooling fans to optimize drive performance and to keep the Toaster and Flyer card cool. Other features include 300-watt power supply, high density floppy drive, and 50MHz 68060 processor standard. For pricing information, call DVS Direct at (814) 371-5640 or visit the DVS Direct Web site at www.dvsdirect.com.



Circle #198

Stealth

The Stealth FlyerWire wired remote controller, by Megagem, gives your NewTek Flyer a professional jog wheel and VCR-like controls for editing, including Play, Pause, Stop, Jog Forward/Reverse, Fast Forward/Rewind, Set In/Out, and Goto In/Out.

The FlyerWire remote edits clips directly and its Stealth software driver integrates the remote into the Flyer working environment. FlyerWire automatically and instantly lets you jog, play, and edit any clip in your project.

Stealth's window appears right on the Flyer's own screen and has a GUI for LayerPlayer, synchronized dual-stream video layering, keying, and mixing. Stealth displays real-time readouts of timecode within a clip and relative to the project start. Stealth also creates Flyer project EDL files, identifies audio overloads by highlighting the offending crouton, and performs instant Flyer video field-freeze.

Stealth FlyerWire is \$349.95. For more information call (805) 349-1104 or visit www.megagem.com.



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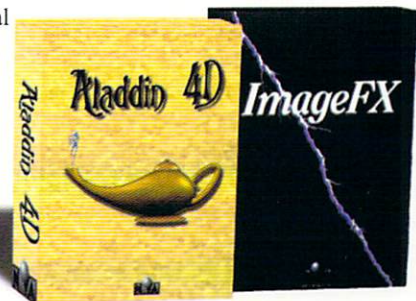


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ShortTakes



Area 51 Launches "From the Earth to the Moon"

BY JOE TRACY

When the first episode of HBO's "From the Earth to the Moon" series airs April 5, the team at Area 51, in Eagle Rock,

CA, will closely analyze how its 55 LightWave 3D shots tied into the final production. It is an historically accurate series that even caught the eye of President Clinton, who commented, after seeing the production, that everyone who worked on the show "should be very proud."

Area 51 was contracted to do work for episode one ("Can We Do This?"), episode three ("We Have Cleared the Tower"), and episode eight ("We Interrupt This Program") of the 12-part series. The series, produced by Tom Hanks, will air two episodes every Sunday night for six weeks.

It is only through the persistence of Area 51 that it ended up with 55 shots in the first episode. According to Scott Wheeler, Area 51's digital effects supervisor for the production, his team originally was scheduled to do five minor CGI enhancements, as models were planned to be used exclusively for the entire series. Area 51 saw a greater potential, however, and the team spent weeks taking NASA models they created and used in NBC's "Dark Skies" series to produce new test shots to convince the series visual effect supervisor,

Ernest Farino, to let Area 51 take a more commanding lead. An entire demo video was created with the type of specific high-quality effects work Area 51 could deliver to the production. It worked!

The Area 51 team behind the production included Tim McHugh (visual effects supervisor), Mark Sawicki (visual effects co-supervisor), Wheeler (digital effects supervisor), Sheri Rycus-Weston (visual effects coordinator), Chris Richardson (production assistant), Justin Hammond (compositing and pick-up modeling), Gena Di Bari (Agena rocket modeler), Dave Carlson (Gemini and astronaut suit modeler), Dave Jones (environmental testing and parachute modeling), and Andrew Harlow (Redstone rocket and the Apollo re-entry). All of them worked on the animation.

One of the biggest challenges was the

design of the astronaut and astronaut suit used in some of the key spacewalk scenes. Carlson received the actual suit worn by the actor and nicely laid it out on a desk where he modeled it in LightWave, realizing when he was done that he should have had someone wearing the suit when he modeled it to capture the natural wrinkles.

"Building cloth and wrinkles in CG is probably one of the most difficult things to do," says Carlson. His solution was "mostly bump maps for wrinkles."

Carlson reminisces on how the effects supervisor was "real squeamish" about letting Area 51 do CGI suit shots because the scenes would cut back and forth between the CGI suit and actual astronaut. It had to be seamless. The end result was perfect.

While Carlson was busy with the suit, fellow modeler Di Bari was working with him on the glove for the suit as well as the life support pack, helmet, and the Agena (part of the launch vehicle that orbited with the rockets).

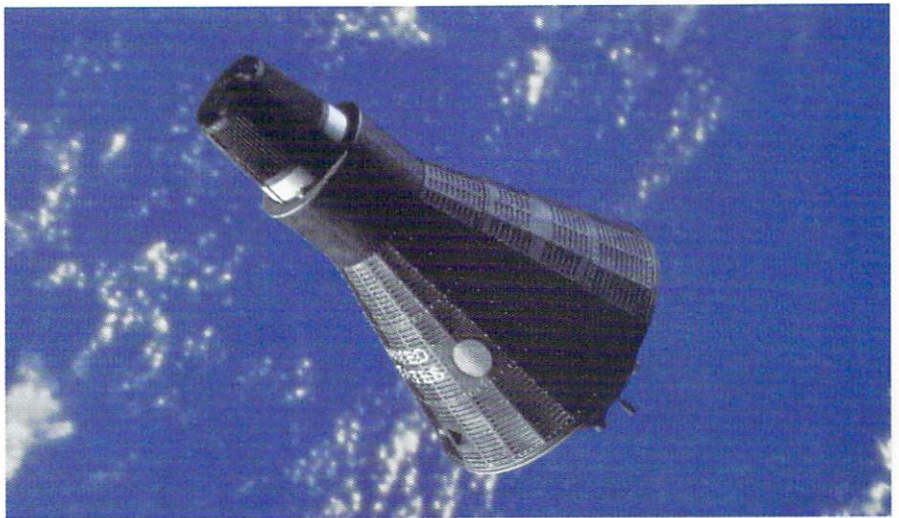
"Puppet Master is our friend now," says Di Bari, commenting on the use of it with the various aspects of the astronaut suit. One of her biggest challenges, however, was the Agena, which she used many NASA photos to recreate. "Having to be historically accurate made the program more challenging, because I couldn't go for the aesthetic [improvements]," she said. Real models had to be matched, which made "surfacing and modeling real important," she added.

In another spacious area (Area 51 has a policy of giving each animator a lot of space to work in), Jones was working on the parachute

deployment shots and setting up environment scenes using cloud layers that consisted of 2D plates layered on top of each other. For the third episode he added moves, texturing, and lighting to CG shots created in conjunction with another effects company, AI. He was doing all this while focusing on work for the *Wishmaster* movie.

Like Jones, Hammond was toggling between the Fox "Millennium" series effects and the first "From the Earth to the Moon" episode where he modeled the launching tower, trucks, and flame walls. Wheeler also was toggling with "Millennium," as the Digital Effects Supervisor, while modeling the Mercury for episode one.

The 55 LightWave effects in the first episode were the main focus for Area 51 during the nine-month period it took to create the shots. In episode three there are two LightWave shots consisting of the Saturn 1B and the launch pad. In the eighth episode,



Area 51's Harlow did the Apollo capsule re-entry into Earth's atmosphere.

At the premiere, many high-profile NASA insiders were in attendance, including original Apollo 8 astronauts. When the premiere ended,

many of them were crying, because of the emotional power of the series, prompting some at Area 51 to suggest a tag line of "From the Earth to the Moon—We Make Astronauts Cry."

NewTek's CEO Steps Down

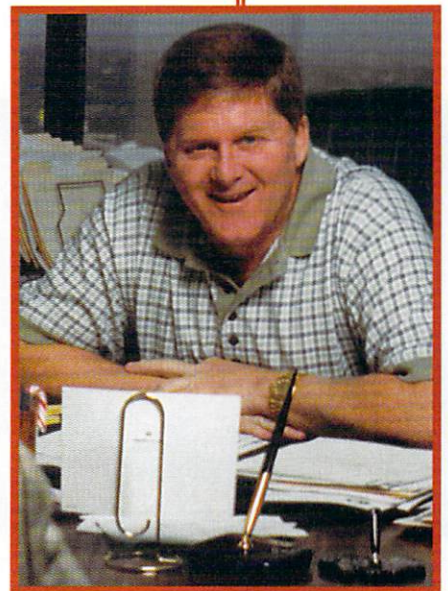
NewTek announced on March 2 that its CEO, Dwight Parscale, has stepped down to pursue other opportunities. Parscale resigned on February 28. Tim Jenison, the founder of NewTek, will serve as interim president and CEO. Jenison, considered the visionary behind the video revolution, will remain in the position until a new executive can be found. NewTek has already started a search for a replacement.

In a press release, NewTek stated that any candidates for the CEO position, which it refers to as a technology executive, must have established industry knowledge and experience in high-growth companies. NewTek plans on filling the position as soon as possible, after a detailed search for the right leader. Once a candidate is interviewed and chosen, Jenison will return to his chairman and founder title while doing what he likes most—*inventing*.

"NewTek creates products that not only reflect the company's entrepreneurial spirit, but that also empower users to become entrepreneurs themselves," said Jenison, whose

company has delivered two new products to the industry in the last two months. "In 1997, NewTek achieved its highest sales year ever with a 46 percent growth rate for the year. I am excited about continuing with the development of future groundbreaking products and guiding the company to even greater success in 1998."

According to sources within NewTek, the departure of Parscale was a "professional departure" and Parscale is helping with the transition. In late 1994, Parscale became CEO of NewTek. Years earlier, in 1986, Parscale was responsible for drawing up the incorporation papers for NewTek.



Prior to NewTek, Parscale had received his law degree from Washburn University in Topeka and worked for four years as an assistant attorney general for Kansas. After tiring of law, he started to run a range of businesses, from a scuba shop to a nightclub. In the February/March 1998 issue of *NewTechniques*, Parscale said, "I've always enjoyed running businesses and turning them around."

Troops Delivers a Star Wars Meets "Cops" Parody

BY JOE TRACY

Imagine creating a parody live-action production, complete with LightWave 3D effects, that becomes such a popular underground hit that even George Lucas views it. That's what happened to Kevin Rubio, Shant Jordan, and Patrik Perez who decided in April 1997, apart from their jobs, to do a *Star Wars* meets "Cops" parody. Rubio is the head of Cel Art Animation for the Fox Kids Network, while Jordan and Perez are the supervising animators on "Babylon 5" at Netter Digital Entertainment.



It started when Rubio was with some friends, Steve Melching and Dave Hardgrove, at 20th Century Fox viewing a screening of the Special Edition *Empire Strikes Back*. After the screening a friend of Rubio mentioned that it would be funny if someone created a parody of *Star Wars* meets "Cops."

"I thought about it and the possibility of pulling the whole thing off," says Rubio, "and then ran with the idea."

Rubio says the purpose of *Troops* is to showcase the talents of him and his friends to get some freelance work. "*Troops* is essentially a demo reel," he says. At 10 minutes in length, it plays like a mini-movie, complete with a script, storyboard, and even a premiere that was held in San Diego. "We finished the last composite 14 hours before it was to premiere in San Diego," says Rubio.

Troops, edited by David Foster, a "Babylon 5" editor, is split into two "Cops"-like segments that take place in the *Star Wars* universe. It opens with some Storm Troopers stopping some suspicious Jawas who the Troopers think stole a droid. When the Jawas run, the Troopers shoot them, then Imperial ships destroy the Sand Crawler.

In the second segment, a domestic disturbance call at the home of Luke Skywalker's aunt and uncle turns ugly when the aunt accidentally sets off a Thermal detonator, destroy-

ing her and her husband. Luke, of course, isn't there. The movie gives a whole new insight into how the actual story could have played out differently, yet with the same end results. That's part of its success.

For the LightWave 3D effects, Jordan and Perez only had only three days to complete 15 effect shots, due to their time commitments to "Babylon 5" and the lateness in receiving the production.

Jordan says that one of the favorite effects they did is the first effect you see when you come up from black and see a lot of CG action (pictured). "This 10-second shot was most fun to tweak," says Jordan.

According to Perez, one of the favorite things they like to do is to "take live action shots and incorporate CG into them," he says. Jordan agrees, saying, "We tend to incorporate CG into live action backgrounds within LightWave versus handing it off to another company." He thinks that if NewTek improved LightWave's tracking, it could have major benefits for FX houses importing and tracking LightWave shots directly in Layout.

From blowing off the head of Jawas to blowing up a Sand Crawler, and from Imperial speed bikes to recreating the Farm of Luke's Aunt and Uncle, after they burn, the 15 effects kept Jordan and Perez busy, without sleep, for nearly 72 straight hours. Their last shot, the Farm, which is completely CGI, was started at 6 a.m. the day the project was to premiere at a science fiction Expo last July in San Diego. They admit to being delirious and call the fact that the fire freezes, when fading out, their

(Continued on page 16)

LENY 1998

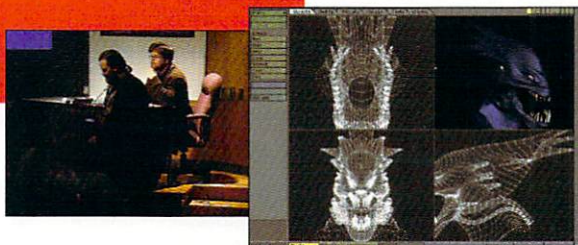
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TROOPS

(Continued from page 14)

"signature" and proof that the shot was CGI to any disbelievers.

And there are disbelievers. Many people believe the shots were SGI creations even when told it's LightWave. And ILM has even held special in-house screenings of *Troops*. "Having them admire something we've done [in LightWave] is actually a cool thing," says Jordan. Not missing a beat, Perez adds, "With all the press, maybe George Lucas will get an idea."

Troops has won critical acclaim and since copies of it can't be sold, due to the legalities of the characters involved, bootleg copies have popped up everywhere with some companies making illegal profits, which concerns those involved with the project.

To help counter that, the entire production is downloadable, for free, on-line at www.the-

force.net. Recent articles by *Newsweek*, *Entertainment Weekly*, and *Time Digital* have almost promoted *Troops* to a cult status with a large following.

"It's a very exciting time to be a LightWave animator," says Jordan.

Even so, in terms of effects, "we weren't incredibly happy with what we had done," says Perez. "We really wanted to polish it up."

So will it ever be done to their complete satisfaction? "We do have some plans to make revisions," says Jordan. "I think eventually, time permitting, we'll do something to make ourselves happy."

You will be able to see *Troops* at the LightWave Theater event being held this year at the DCC Expo, December 2-4. For more information on the Expo, visit www.dccexpo.com or www.newtechniques.com.

International Amiga Show Set for Late May

The International Amiga 98 Show will take place at the International Plaza Hotel & Conference Centre in Toronto, Canada on May 29-30. Referred to as "The New Official Canadian Amiga Show Serving North America," the International Amiga 98 Show has over a dozen high-profile exhibitors confirmed with many more planning on attending. Companies already on board include NewTek, Amiga International, Nova Design, Asimware, Amiga Inc., and Phase 5, to name a few.

According to the show developers, attendance is expected to reach 6,000, almost twice as many people as at past International Amiga shows, due in part to the new positioning of the Amiga platform. Other recent Amiga shows have all reported much higher attendance since Gateway 2000 took over the Amiga technology.

Besides exhibits, a special developers' conference will be hosted by Amiga, Inc. and a number of other companies. Keynotes and special exhibitor sessions will be open to the public, while some of the more in-depth courses will be exclusively for Amiga developers.

Admission cost for the conference is only \$15, payable on site. For more information on the International Amiga 98 Show, check out www.randomize.com or call (905) 939-8371.

NewTek Creates Strategic Toaster /Flyer Bundles!

NewTek announced in early April that it is now offering strategic new pricing and bundling packages for the Video Toaster and Video Toaster Flyer (all applicable software included), with LightWave 3D 5.0 on the Amiga. Some of the packages even include an Amiga 4000 Tower computer! In total, five new packages and two specials are offered with prices subject to change. The bundles are for a limited time only and widely available now as follows:

Bundle A: \$3,495 (MSRP)

Video Toaster 4000
Video Toaster Flyer 4000
Amiga LightWave 3D 5.0

Bundle B: \$4,995 (MSRP)

Video Toaster 4000
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New Amiga 4000 Tower Computer

Bundle C: \$3,495 (MSRP)

Video Toaster 4000
Amiga LightWave 3D 5.0
New Amiga 4000 Tower Computer

Bundle D: \$995 (MSRP)

Video Toaster 4000
Amiga LightWave 3D 5.0

Bundle E: \$2,795 (MSRP)

Video Toaster Flyer
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Special 1: \$295 (MSRP)

A one-year warranty extension, even if your current warranty is expired! This is for NewTek products only (not your Amiga computer).

Special 2: \$1,500 (MSRP)

Replacement Flyer card with new IC chips.



Image created with Inspire 3D

From the creators of
LightWave 3D

Unleash Your Creative Power With Inspire 3D

As a graphics professional, you are expected to create dynamic print ads, multimedia productions, and stunning visuals for the web. Faking it in a 2D package falls short of what you want to deliver. It's time to take the 3D plunge, but you've only found under-powered toys that fall short of getting the job done right.

Finally, you have a choice. NewTek, the company that took Hollywood by storm with LightWave 3D®, has just released Inspire 3D™. It's a powerful, yet easy to learn 3D program designed specifically for the needs of the professional graphic artist. It comes with an interactive tutorial that gets you up and running in no time. Before you know it, you'll be creating stunning graphics that satisfy even the most demanding clients.

NewTek designed Inspire 3D based on its experience with LightWave, the choice of Hollywood animation studios such as Dreamworks and Digital Domain. We have worked hand-in-hand with graphic artists to develop powerful, creative tools for more than a decade.

Best of all, you'll find Inspire 3D works well with Adobe Photoshop®, Quark XPress®, Macromedia FreeHand®, and Macromedia Director®, as well as dozens of other programs that professionals use every day. As your imagination and creative needs grow, you'll find that Inspire 3D has the power to make all your artistic creations come to life.



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Mike Peraza with his animated friends. Photo by David R. Crane/Los Angeles Daily News

A concept drawing based on a rough model by Peraza using LightWave 3D. It is the Paris domain of Rasputin.



EDITOR'S NOTE:

Mike Peraza has a deep history in the artistry of animation. He attended Cal Arts on a Disney scholarship and worked for the Disney Feature Animation unit. More recently, Peraza served as production designer for the hit Fox animation *Anastasia* (on video April 28). His software of choice for the previzualization designs (all created by him) was LightWave 3D. We recently caught up with the ever-busy Peraza to ask him some questions about his history with LightWave and the use of it in the previzualization of *Anastasia*.

Check out the NewTechniques Web site, www.newtechniques.com, to see a few more LightWave *Anastasia* previzualization images!

Mike Peraza THE VISUALIZER

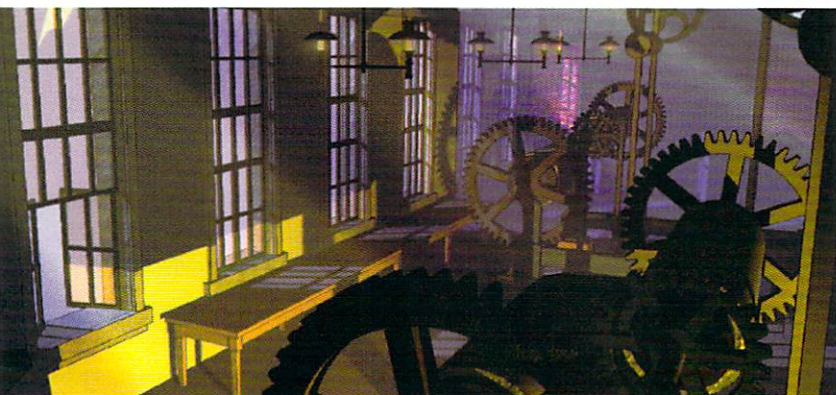
NewTechniques: To start with, tell us a little bit about your history in animation and when you first became acquainted with NewTek's LightWave 3D program.

Peraza: I began in animation with my family's 8mm camera at an early age, but I guess I wasn't legitimate until I starting getting paid for it, which was at the end of high school. I did local public health and safety spots for Channel 5 in Mobile, AL. It was nice of them to give me a chance, especially since I'm sure the animation wasn't of very high quality. I had heard of a school called Cal Arts in California and was lucky enough to get a Disney scholarship to attend. It was a great experience since both the teacher as well as the student quality level was incredibly high. That led directly to an offer from Disney Studios to join its animation feature unit. The timing was fortunate for me in that the Disney studio at that time, in the mid 1970s, still employed a number of their animation legends. These included great talents such as Don Griffith, Woolie Reiterman, Frank Thomas, Ollie Johnson, Eric Larson, and others who never tired of my endless questions into the magic of Disney Animation.

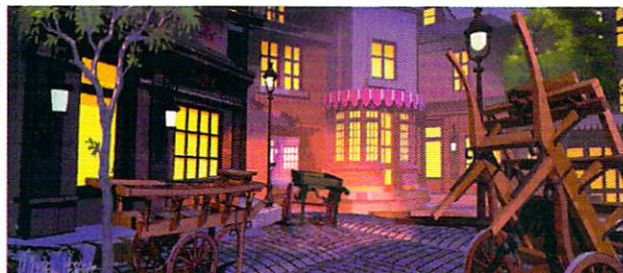
I eventually met with Dave English, who had been instrumental in developing the Aces award-winning computer camera system, and we discussed the possibility of starting a computer graphics department at Disney Feature Animation. We started to develop a new film called *Basil of Baker Street* (released as *Great Mouse Detective*) and I thought of areas where I could try out computer graphics. I wanted to use some in the opening panorama of London, the interior of a Victorian toy shop, and on the face and inside the gear chamber of Big Ben. It was quite a hassle to gain interest with this as there was a very vocal anti-computer contingent then in control at Disney. I worked at night across the street at WED to create two test sequences. One had my rough animation of Basil and his friend Dawson walking across a chess board in the toy shop. The other had a brief chase through some massive gears in the bell chamber. Although some of the animators were excited, the idea was shot down. It wasn't until new management, headed by Roy Disney, came into my room and saw the wireframe printouts and



A LightWave CGI concept image representing the Moulin Rouge in Paris. It also served as a virtual set where you could literally tour the streets (even driving across bridges and entering buildings) in LightWave.



This concept LightWave set is inside a factory in Russia. Even the background walls contain banners of revolution proclamations (look closely).



One of the more romantic LightWave set concepts, which also was part of the virtual set. You could walk down the Moulin Rouge, turn a corner, and end up in this romantic setting!

watched the short test reel that we got the go-ahead to do the scenes.

NewTechniques: When were you first introduced to LightWave 3D?

Peraza: I had been a user of DigiView and DigiPaint so I did know of LightWave when it originally was released but it wasn't until later when I was creating a computer graphics department over at Disney Television that I

was personally introduced to the software. It was through necessity, really. I had showed the head of Disney TV, Gary Kreistle, some experimental video I was doing for the proposed Duck Tales Feature. He was impressed and gave me the go-ahead to hire some help. At the time I had been using Sculpt 4-D left over from my Amiga days. This was performing well since my final output was a black-and-white line drawing of vehicles to be touched up by artists overseas. I was, though, looking around for a reasonably priced bit of software that would allow me more freedom in character expression experiments I was starting.

NewTechniques: What is it that most impressed you about LightWave 3D when you first started using it?

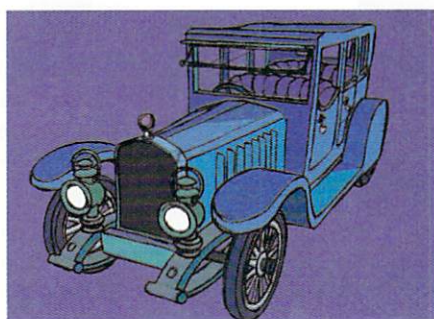
Peraza: I used to frequent a store locally that was dedicated to Amiga, and there was introduced to the Toaster and of course LightWave. I purchased each and was impressed by the ability of the hardware to overlap and export the video signal in such a high-quality manner, but what blew me away was my first introduction to bones manipulation.

NewTechniques: There aren't a whole lot of people who know that LightWave 3D was used extensively in the pre-production of Fox's animated hit, Anastasia. As production designer for Anastasia, tell us what you used LightWave for and why you chose it for those tasks.

Peraza: I was hired originally as production designer and my job duties included character suggestions, background suggestions, and storyboard. I was thrilled to get on the project since Don Bluth and Gary Goldman would be producing and directing. With Fox in charge under Bill Mechanic's leadership, I was also happy to find a well-equipped state-of-the-art facility. Although the studio used Softimage running on SGI machines, I was still working away on my PC using LightWave. I built relatively simple CGI models of every setting in the film, concentrating mainly on the palaces, Paris, and the bridge settings because of their architectural complexity. I used to make a lot of traditional 3D sets out of wood and cardboard for reference and to help the director when I was at Disney Features. I think that experience enabled me to become quite fast at modeling in virtual 3D with software. I would gather research of a setting such as the Moulin Rouge in Paris, then after sketching it and showing it to Don and Gary I would model the setting over the weekend. I could then "stroll" through the area "taking pictures" I think would help further the storyline and print these out "hard copy" at high resolution and within a large format of 10-by-20-inches for cir-

TEKMASTERS

A simple LightWave concept outside of Catharine's palace. "My LightWave work was simple shapes and only used as inspirational eye candy," says Peraza.



A tour car based on a LightWave model Peraza built of an old Fiat.

culation through the studio. My LightWave work was simple shapes and only used as inspirational eye candy. All the final breathtaking CGI work that you see on the screen was delivered by Tom Miller's incredibly talented department.

NewTechniques: What was the feedback you received on the LightWave pre-production designs for *Anastasia* and why wasn't LightWave used in the actual final production?

Peraza: The feedback was always extremely positive. You have to understand that when Don and Gary originally left Disney to begin their own studio, Disney and most of the animation industry had become stagnant. Don's first independent picture, *Secret of Nimh*, gave the entire feature industry a much-needed creative kick in the pants and new hope that it would continue. Don has always fostered

new ideas and welcomes new challenges. When I worked with him on the CD games, I mentioned that we might be able to substitute the flat artwork needed for a chase through a maze with a real one. I explained it to him and within the hour he had given the go-ahead for petty cash and I began construction. The end results seen throughout "Space Ace" were really ahead of their time and were even referred to as computer graphics in some reviews.

Don enjoyed the LightWave work I did in *Anastasia* because it furthered visual discussions and was being turned around so quickly. There was never any discussion as to using LightWave in the final production as Fox had already installed a full-blown state-of-the-art CGI facility.

NewTechniques: We're starting to see a lot of LightWave work pop-

ping up in areas of more traditional animation like *The Silver Surfer*, *Invasion America* (see "ShortTakes"), *Batman Vs. Mr. Freeze*, and *Santa Vs. the Snowman*. Do you see LightWave being influential in some upcoming higher-end "traditional animation" productions and are you a part of any such productions?

Peraza: I believe with the projects you have just mentioned, as well as other well-known examples such as *Titanic*, that LightWave will certainly become more accepted right alongside its more expensive counterparts. At the present time I am developing an exciting new feature under Don and Gary's guidance for Fox Feature Animation. I am experimenting with LightWave as an artistic tool that hopefully will add a unique visual style to the film. We'll just have to wait and see.

NewTechniques: Based on your experience with LightWave in movies like *Anastasia*, if you could make one feature recommendation to NewTek that would make your job easier, what would it be?

Peraza: Get more people in the business like myself involved with the beta-testing process. Too many times I have called tech support with what should have been simple questions and have not

received a solution. Eventually I would find the answer in a magazine like the defunct *LightWavePro* or this one. More selective beta sites would go a long way in keeping the bug count lower and incorporate real production needs. The cross platform compatibility, not just to SGI but also to machines such as Macintosh, has been overdue but certainly welcomed as has the "cel look." I just hope that NewTek will remain aware of its client base and appreciate its support of their fine software.

NewTechniques: In closing, what advice would you give to a LightWave animator who wants to pursue a career similar to yours?

Peraza: The best advice I could offer anyone breaking into this field is to avoid skipping over the basics. By that I mean a good solid understanding of anatomy through life drawing classes certainly helps when modeling humanoid characters. Likewise, classes in architectural studies will give you the foundation for richer, varied, and more detailed buildings. Also, check out some of the older classics such as *Citizen Kane* and note the brilliant cinematography employed to especially enhance mood through judicious use of light and dark. Along with observing the background, be aware of the actions of the actors. The finest animators I have worked with have spent endless hours studying silent masters such as Keaton to plug into their own model movements. Simply put, Picasso didn't start out immediately knocking out his Cubist masterpieces, but rather it was a progression of abilities gathered from a lifetime of work. Never give up or let anyone's ignorance discourage you.



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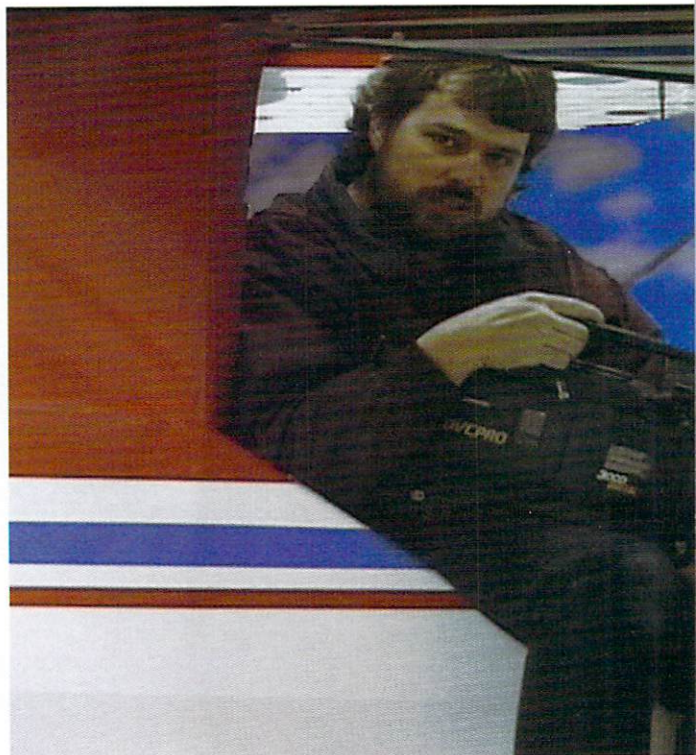
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Flyer Personalities

Soaring to New Heights

BY DICK DE JONG
AND MOLLY DINKINS



NewTek's Video Toaster Flyer is the Rodney Dangerfield of the non-linear editing world. It withstood the high-pressure demands of the International Press Center at the 1996 Olympics. It endured the high-altitude, zero-gravity rigors of NASA's vomit comet. And the Flyer flawlessly performed in the sea-going 24 hour-a-day broadcasts of the Titanic explorations (*NewTechniques*, December 1997). Despite such high-profile assignments, the Flyer seems to get no respect.

In the last couple of years, it seems that even NewTek has been treating the Flyer like Weird Uncle Wilbur whom nobody in the family ever talks about.

Why? Well, simply, the Flyer has not been instrumental in any billion dollar blockbuster movies lately. LightWave 3D is Kate Winslet, the incandescent ingenue who receives all the attention. The Flyer is Kathy Bates, the character actor who sparkles in the supporting role.

While putting together this article, it became abundantly clear that Flyer users are the blue-collar workers in the family. Many of them work in small-scale studios (occasionally home offices) with fewer than five full-time staff. They produce everything from nationally broadcast ads to corporate videos to local high school plays. That is not to say the Flyer isn't integrated into some major video production facilities. It's just that the history of the Flyer resides in the stories of the small independent studios around the world. These partisans are the front line of the desktop video revolution that Tim Jenison and



Darrel Goheen spends a large portion of his time producing corporate videos for an experimental aircraft company. All his footage is digital, allowing him to directly record into the Flyer, as digital video can bypass a time base corrector.

open aircraft door.

The quarterly video newsletter that Goheen creates for RANS keeps him running and his Flyer humming. Recently, Goheen has been shooting on digital video, feeding the signal directly into the Flyer and then mastering onto his DVC Pro deck. When asked what he likes about the Flyer, Goheen says, "Just about everything. The flexibility it gives me in editing is great. The Flyer allows me to make changes easily and quickly."

When it comes to third-party software, Goheen echoes the sentiments of all the Flyer users interviewed—the programs are indispensable. Goheen mentions OZware's Co-Pilot Audio and Video as "must-haves." Other third-party companies that have been singled out are ProWave and MegageM. As Robert Levine (see sidebar, page 24) says, "NewTek

the Video Toaster instigated less than a decade ago.

Darrel Goheen — Total Video — Hays, Kansas

Darrel Goheen takes his flying literally. One of his major clients is RANS Aircraft, a manufacturer of experimental airplanes. In producing their corporate videos, Goheen has logged a number of flight hours hanging out of an



Hollywood New York Ltd



Paul Goldberg's Flyer studio is used to edit shows like "MuscleSport USA," which airs on the Fox Sports Network.

did a good job of providing the initial technology. The third-party software adds the details."

Paul Goldberg — Hollywood New York — Queens, New York

For Paul Goldberg, the Flyer is a timesaver. Goldberg produces, directs, and edits "MuscleSport USA," "the premier bodybuilding show in the nation," that is broadcast monthly over the Fox Sports Network.

Each month Goldberg acquires material from four-camera truck shoots of events from around the country. Originally, he would edit the show at high-end facilities in New York City. Working this expensive way, he could complete a program in three weeks.

When Goldberg heard about the Flyer, he was the first in line to buy one from Ralph Messana, NewTek's East Coast representative. Goldberg then built his own

Part of Darrel Goheen's job is to create a quarterly video newsletter for RANS Aircraft.

UPDATE

Bruce Braun — Creative Teleproductions Inc.— Lynchburg, Virginia

Though eventful, Bruce Braun's Titanic recovery broadcast (*NewTechniques*, December 1997) is only one of the more than 7,000 productions Braun has written, directed, produced, photographed, and/or edited in a career that is approaching 30 years.

Braun has traveled many miles and seen a wide range of equipment. Still, he uses the Flyer for 80 percent of the editing that he does in his digital projects studio, which has more than \$200,000 worth of equipment.

In one of his current projects for Davies Media, he is traveling around the country shooting footage on churches, their pastors, and congregations. He edits the clips on his Flyer into customized 30 second TV spots. So far, the project numbers 400 churches. "I had a client that liked all the clips but wanted them in a different order. It took me about 30 seconds to make the changes," Braun said.

UPDATE

Robert Levine — Florida State University — Tallahassee, Florida

Robert Levine is the AV specialist at the College of Communication. The university's extensive media production facility (Video Toaster User, September 1995) includes four Toasters, a Flyer, and five Avid MediaComposers.

The Flyer serves primarily as a workstation for the Computer Graphics for Television course. "The Flyer has a much easier learning curve compared to the Avids. Because of this, we are looking for ways to expand the Flyer's role in some of our other production courses," Levine says.

"The Flyer more than holds its own in head-to-head showdowns with the Avids," Levine says. He adds that he wishes NewTek would deliver some high-end audio tools.

"We try and teach these young people that all this computer hardware and software are just tools," Levine says. "The tools get bigger and better and faster, but they are no substitute for experience, hard work, and ultimately, talent."



Goldberg is able to edit "MuscleSport USA" in eight days thanks to the ease of use and broadcast quality of the Flyer.

facility in Queens. With the Flyer integrated into the studio, Goldberg is able to edit "MuscleSport USA" in eight days flat. "It's great," he says. "I'm thinking about setting up a second system."

Goldberg also has linked his Amiga/Flyer system to a PC with the Siamese card. The configuration is a vital link with his graphic designer, Danny Myricks. Myricks, working out of his own studio, can send files over the Internet to Goldberg's PC and then Goldberg transfers them effortlessly to the Amiga.

Currently, Goldberg is using Panasonic's DVC Pro camera to shoot an independent film called *The Trial*. When the producers came to his studio to ask if he wanted to work on the movie, Goldberg was digitizing some video with the Flyer. "When they looked at the output of the Flyer, they were shocked with the high quality," he says. Though they will do the final edit elsewhere, Goldberg plans to use the Flyer for quick test edits.

"Nothing helps visualization better than showing people. And the Flyer is the perfect 'show me'

tool," Goldberg jokes. "I think the Flyer is secretly from Missouri."

Carlos Mantica — Producciones Video Arte — Managua, Nicaragua

Carlos Mantica was the first person in his country to own a Video Toaster. Soon after, officials from the government's television channel were calling and asking if the Toaster was good. "I recommended it," he says. "Now, almost all of Nicaragua's TV stations have one."

When the Flyer was announced at NAB in 1994, Mantica put his name on the list and was one of the first in the world to own one. In fact, Mantica still is the only Flyer user in Nicaragua.

Mantica, a graduate of Loyola University in New Orleans, returned to his country in 1988 and bought a 3/4-inch camera unit and an Amiga 2000. Today, his company, Producciones Video Arte, does it all—commercials, documentaries, a TV series (a cooking show), news, and infomercials.

In 1990, Mantica's company did the TV ad campaign for Violeta Chamorro, who went on to win the historic presidential election. In the most recent elections,

Mantica videotaped another candidate as he was making his campaign rounds. Mantica used the Flyer to edit daily news segments that were broadcast on national TV.

With a grant from Texaco, Producciones Video Arte has produced a series of 26 mini-documentaries on ecology and nature. Crews have gathered more than 90 hours of footage from all over Nicaragua, from the edge of a volcano to the depths of a rain forest. The segments are edited on the Flyer and broadcast on one of the country's major TV stations.

"The Flyer is like a workhorse here. The interface is easy to use and it's fast," Mantica says. "And my impatient clients don't like to wait."

As for the challenge of language in using the Flyer, Mantica is the only one on his staff who speaks English. No problem, says Mantica. "The Flyer is so intuitive that it's easy to train people on it. One of our editors picked it up in a couple of days just by watching me." He adds, "The only time he would call me for help is when an error message came up on the screen."

Jim Broek — Providence Video — Escondido, California

Jim Broek is the prototypical Toaster/Flyer owner. After graduating from college in 1986, Broek started working in radio (and yes, he did play in a band in college). He dabbled in computer graphics and video, but Broek explains, "They were just hobbies."

Pre-Toaster, Broek worked with DigiView and DigiPaint. He bought Toaster 1.0 as soon as it came out. Because he was spending more time, energy, and cash on his "toys," his wife suggested that he start earning some money using them.

So Broek founded his independent video studio. "I've never done weddings," Broek says. "When I started, I promised



Jim Broek has never filmed a wedding. His focus is on corporate clients and training videos.

myself not to lose my weekends."

Broek concentrates on corporate clients. He produces a wide range of sales and training videos. "I never know what I'm going to do next," he admits. "That's part of the fun of the job. You're constantly learning about new things."

Broek also creates ads for local and national markets. Probably his highest profile ads are the ones he does for Sleep Comfort, the adjustable bed manufacturer. They are nationally broadcast over cable stations.

Though probably not typical, the story of how Broek bought his Flyer is a testament to him and the machine. "I was doing a

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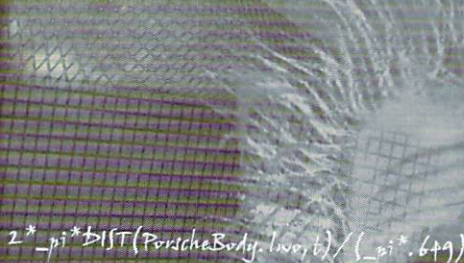
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April/May 1998 **NEWTECHNIQUES** 25

UPDATE

**Sam Kanter — Video Arts,
NYC — New York, New York**

Since Sam Kanter's article on his video art collaborations with dancer and wife Deborah Gladstein (*Video Toaster User*, September 1996), the couple has two new additions to their life—a baby boy and the Flyer.

In between the commercial projects to make a living, Kanter is collaborating with his wife on editing 15 hours of archival footage of her dancing. Kanter describes the process: "It will be pure experimentation—taking hundreds of small clips and putting them together into an experimental piece—and the Flyer is ideal as an experimental tool."



Jim Broek's Providence Video Productions enjoys success thanks to the Flyer. "From the very beginning, the Flyer was extremely easy to use, very intuitive," he says. "It allows people to reach their potential."

music video for a local band, the Rhythmakers," Broek recounts. "I already bid the job and shot it. I had seven or eight angles of them lip-syncing to their songs. I knew I couldn't edit it linearly. I was stuck. So I jumped into the Flyer. I bought it between the shooting and the editing. I set it up the night before the edit." What he didn't figure out that night, he learned as he was editing the next day. "From the very beginning, the Flyer was extremely easy to use, very intuitive. The clients loved the video."

Broek doesn't believe in hiding the editing process from his clients. "I do a lot of over-the-

shoulder editing with my clients watching on a 20-inch TIMM monitor." Because the Flyer is so easy to use, Broek feels that his customers can describe better what they want. "Sometimes describing isn't enough. With the Flyer, we can see it in real time," he says.

Since he has purchased his Flyer, Broek refuses to edit on tape. He concludes, "The Flyer is an enabler rather than a deterrent to getting jobs. It allows people to reach their potential."

William Bozarth — Interactive Video — Medford, New Jersey

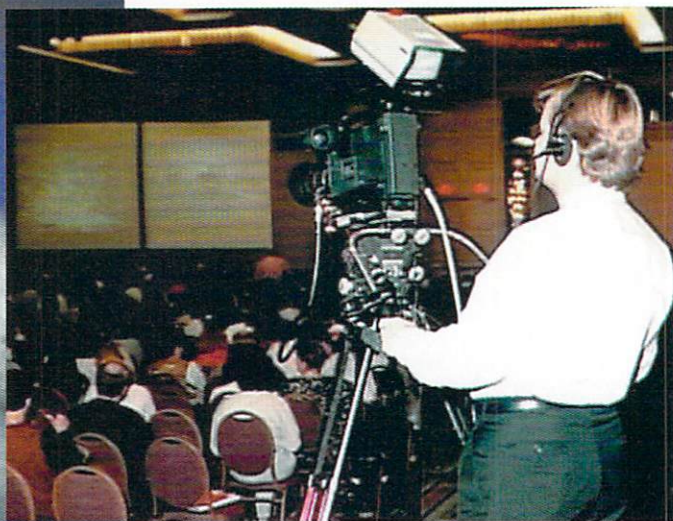
Bill Bozarth's business card could read, "Have Flyers, Will Travel." He has packed up his Flyer systems in their custom made Anvil cases and shipped them off to jobs as far away as California and Florida.

And yes, he does have two Flyers. In fact, the day before our interview, he had just returned

from DVS Direct where Jim Davis had matched his second system with his first—both Amiga 4000s. "They look so much alike, I had to put an A and B on them," Bozarth says. Davis also developed an ingenious design for the SCSI cables so that Bozarth can use all 44GB of video storage on one system without re-cabling.

Bozarth produces corporate videos for high-profile clients like Comcast Cellular. One of his specialties, though, is providing on-location video production support for large conventions. For the last four years, he has been working for Veterinary Learning Systems to provide support for the speaker programs at the annual North American Veterinary Conference in Orlando, Florida. Each year, he packs up his 6 x 8 foot trailer with two Beta decks, three cameras, monitors, lights, and both Amiga systems with Flyers, and hits the road for Florida.

The conference attracts more than 10,000 people and has several overlapping sessions. As Bozarth describes it, "Using a Video Toaster in an Amiga 2000, selected seminars are switched live (three cameras) and recorded on BetacamSP. These seminars are fed live to a master control



Bill Bozarth travels all around the United States with two Flyer systems, producing corporate videos for high-profile clients.



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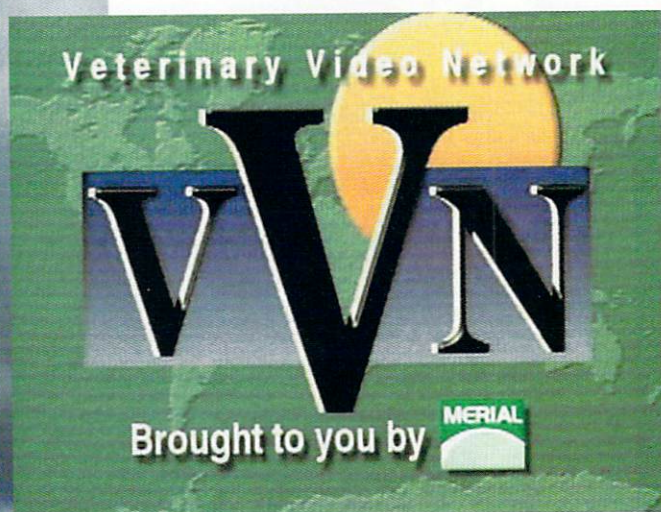
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Owner/Animator
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Clients of Bozarth, like those who produce a quarterly magazine-style show for the veterinary profession have commented that the segments edited on the Video Toaster Flyer are cleaner than other systems, including the Media 100.

area where two Toaster/Flyer systems feed the Marriott World Center closed circuit television system. Additionally, this signal is fed via microwave to two other hotels. The network is live during the day and tape playback at night."

One of the Flyer systems was also used to edit sequences videotaped on the exhibit floor. This year, the only programming fed through the system from tape was the switched 45-minute presentation. Everything else was output from the Flyer systems.

Bozarth has found that the Flyer output compares favorably to other non-linear editing sys-

tems. "In fact, one of my clients puts together a quarterly magazine-style show for the veterinary profession and uses several producers to prepare various segments. Some are edited on the Media 100, some on the Sphere, and some on an Avid. But, he has commented that the segments that I edit on the Flyer are the cleanest of the lot," he says.

Since his out-of-town projects often require him to shoot video during the day and edit at night, Bozarth enjoys the speed and flexibility of the Flyer. And he adds, "The Flyer and I have shared many a five-star hotel room."

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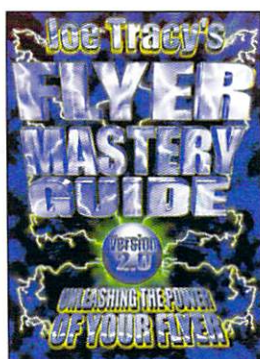
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Plugged In

LIGHTWAVE ADVANCEMENTS THROUGH PLUG-IN SCRIPT WRITING

Bob Hood, the brain behind NewTek's LightWave's Plug-in SDK, teaches you the ropes in this new column!

BY BOB HOOD

AN INTRODUCTION TO SCRIPTING

As complexity is added to computer software, the challenge for the software designers is making that complexity accessible to the average user. Competition ensures that the complexity will increase, so the drive to simplify how the user interacts with the software is guaranteed to proceed apace. However, as the burden of *knowing* shifts away from the user, the burden of *doing* inevitably falls on the software developer. A reduction in the complexity of the interface usually results in a proportional increase in the complexity of the code behind it.

While software users will continue to reap the rewards of this evolving efficiency, there will always be those of us who will stare glassy-eyed at the pixels and contemplate the code beneath. If we are offered the means to endow the application with greater capabilities, things like sleep, social contact with other humans, and sunshine will all become nothing but a fading memory.

Toys in the Basement

Since version 4.0, LightWave 3D has provided a plug-in architecture through which software developers, using C or C++, could access and control LightWave's operations programmatically. LightWave 5.5 introduced a plug-in "companion" utility, known as LScript, which provides a friendlier means of creating LightWave plug-ins through scripting.

Scripting is a means of programming that does not require a compiler, and will often provide a great deal of convenience to the programmer. LScript encapsulates the bulk of the LightWave plug-in SDK, and shields the script writer from some of the more complex and arcane aspects of the SDK's native implementation.

What You Can Expect

In this column, I will explore the underlying plug-in architecture contained in LightWave. While the plug-in architecture is largely similar throughout LightWave, many different plug-in types can be created to accomplish a variety of tasks. Plug-ins can also come in two flavors: native code—those built from C or C++—which I often refer to as "hard" plug-ins; and scripts—those written for use with LightWave's LScript system—which I refer to as "soft"

plug-ins.

I will try to provide insight and examine topics that will offer something to both the beginner and advanced plug-in developer. To reduce confusion, each topic will target one of these two groups, and the code I use will be of either the "hard" (C/C++) or the "soft" (script) type. Of no small importance is the fact that you should familiarize yourself with the contents of the documentation for the plug-in medium you're interested in. This would be either the LightWave 3D Plug-in SDK for C/C++ plug-ins, or the LScript Online documentation for scripting plug-ins. The ambitious reader might wish to review both (for beginners, I would recommend you start with LScript to gain the "high-level" view).

The LightWave 3D Plug-in SDK documentation can be found either on the LightWave 3D CD-

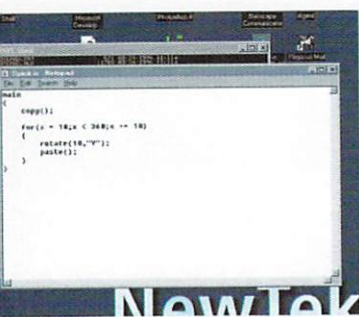


Figure 1: Using the Notepad text editor to create and edit LScripts under Windows 95/NT.

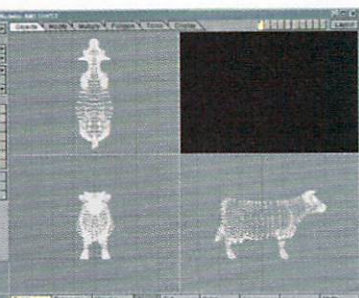


Figure 2: The points that remain behind after killing an object's polygons.

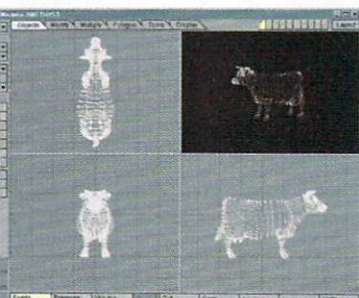


Figure 3: New polygons created from "invisible" points using the "Pnt2Pol.Is" LScript.

ROM or on the NewTek Web site at www.newtek.com. For LScript, the online documentation can be found either on the LightWave 3D 5.5 CD-ROM or on my personal Web site at www.flash.net/~bhood2. My Web site also contains resources pertaining directly to LightWave plug-in development.

What You Will Need

Developing plug-ins in C and/or C++ will require a compiler capable of generating shared libraries. Under Windows 95, or Windows NT (which includes the Intel and Alpha architectures), such libraries are known as Dynamic Link Libraries (DLLs). I use Microsoft Visual C++ v4.2 (v4.0 on Alpha-based hardware) to produce native-code plug-ins for use under these Win32 operating systems. For Macintosh PowerPC plug-ins, I use the Code Warrior C/C++ development software by Metrowerks. For SGI and Sun platforms, the manufacturer's available C/C++ compilers (typically an additional purchase) easily facilitate the creation of UNIX-shared object files.

Theoretically, any native-code compiler capable of generating shared libraries (32-bit DLLs, UNIX-shared objects, etc.) should be perfectly acceptable for use in creating LightWave 3D plug-ins. However, before spending your hard-earned funds, you should make every attempt to ensure that the compiler you plan to purchase can accomplish the task.

Of course, if you choose to employ LScript to create plug-ins, you need not be concerned about compilers or third-party software. Because the LScript interpreter is available in LightWave v5.5 or higher, you need only a text editor and an understanding of the LScript language.

When creating LScripts, any editor capable of saving text files will be adequate. Under Windows 95 or Windows NT, you can use the Notepad application that comes with the operating system (see Figure 1); the WordPad application will also allow you to save your work as a text file. Users of UNIX versions of LightWave can create scripts using the built-in vi text editor, or any X- or Motif-based editor capable of saving text files. Macintosh LightWave users can create their scripts using the SimpleText editor that accompanies the operating system.

LScript Versus C

Due to its interpreted nature, LScript will never be as fast as native-code plug-ins written in C or C++. However, what LScript lacks in speed it makes up for through its conveniences, and more notably, its inherent portability. What I mean by this is that, with very limited exceptions, once a script works on one platform, it will work on all platforms instantly.

For the most part, the LScript's cross-platform exceptions pertain directly to the differences in the requirements of the underlying operating system (how files are located, available "shell" processing, etc.). If your scripts concentrate solely on performing some task within LightWave, then these exceptions will not have an impact. We will examine these exceptions as they arise.

On the other hand, writing native-code plug-ins can provide you with the raw processing speed and (if written properly) the efficient and compact memory usage that can be achieved in C/C++. Large-scale plug-in applications can suffer from the relative slowness and large memory footprint that comes with LScript—convenience has its price, after all. In such a situation, however, you could easily "proof" your plug-in using LScript, and then port the working script or scripts into native code for release.

One for the Road

I will leave you with a short Modeler LScript to whet your appetite. The Modeler LScript is presented in Listing 1. Of course, LScripts can be shorter, but hardly more practical. In just a few lines of code, this script will convert all points in the active foreground layer(s) into single-point polygons.

Figure 2 shows the cow object after it has been loaded into Modeler, and its attendant polygons removed (by pressing the 'k' key). Notice that nothing is visible in the OpenGL preview window in the upper right hand display. Points will not render in LightWave unless they are first converted into polygons.

Enter the script shown in Listing 1 into your favorite text editor, and save it under the name "Pnt2Pol.ls". Your choice of location for saving is important; you should select or create a directory for saving that will be used to contain future LScripts.

Once you have saved your new script, select

```
main
{
    count = editbegin();

    for(x = 1; x <= count; x++)
        addpolygon(points[x]);

    editend();
}
```

Listing 1: The Pnt2Pol.ls LScript

the "LScript" plug-in from the ObjectsCustom menu, and navigate to and select the Pnt2Pol.ls script.

After you have executed this LScript, all of the points in your foreground layer(s) will no longer exist simply as points. Each has been promoted to the status of single-point polygons. Figure 3 shows the change that takes place with regard to the visibility of the points after the script completes. Because they are now polygons, they will render inside of Layout.

Referring to the Pnt2Pol.ls script, Modeler is first switched into a mode where the mesh data can be modified. The editbegin() function call initiates this mode. It also returns the number of points found in the current foreground layer. We remember this value for use in the for() loop that follows it. The for() loop runs sequentially through all visible points and converts them into polygons using the LScript addpolygon() function call. Although this function returns the identifier of the new polygon, we do nothing further with the polygon, so we take no measures to retain it. We tell Modeler to retain the changes we have made by calling editend(). This call also switches us out of the mesh editing mode that editbegin() placed us in.

Next Time

In next month's column, we will continue our "soft" plug-in journey by examining the workings of another Modeler LScript in greater detail.

Bob Hood is in charge of LightWave 3D's plug-in SDK development.



INNOVATIVE LIGHTWAVE 3D APPLICATIONS FROM OUR LIGHTWAVE MUSE

WAVES

If you couldn't be a LightWave artist, what would you be?

It's Your Career LIVE IT!

BY JOHN
GROSS

If you read the same magazines I do, you've probably read about the Hollywood experience as seen through the eyes of (seemingly) jaded Hollywood animators. Or perhaps you've been captivated by the rambling braggadocio of Hollywood CEOs. In either case, while there were some good points here and there, I feel you may not be getting the whole true picture of Hollywood...at least from my point of view.



*The reward of being an artist is in the art itself, not in the money you can make or the credits you'll receive.
[Image from an episode of "Star Trek: Deep Space Nine"]*

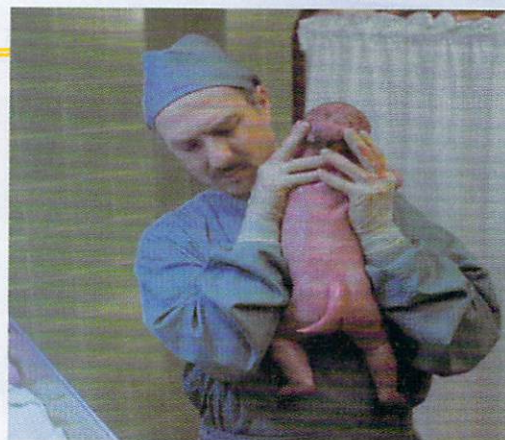
In keeping with the "Hollywood" theme that I've seen in magazines as of late, I'm going to give you a look at Hollywood from my vantage point. I'll leave it up to you to decide how accurate my viewpoint looks.

When I first got the chance to come to

Hollywood I was excited—more excited than anything that had happened to me in a while. I was finally going to get the chance to be rewarded for something that I loved to do. It wasn't long before I made the big decision and packed up the car with all of my computers and headed for Beverly.

When I got out here and got to work I was still excited. I even remained excited getting exposed to stereotypical Hollywood types. I continued to be excited after all the hard work I was doing had to be redone and then redone again and then redone again based on the comments of the producers and authority du jour. I remained excited about what I was doing even after spending an entire month modeling the same parts of "seaQuest" over and over again to make it right. I made friends with the other animators and we commiserated on how crazy the producers were and how the original intent of the show was "lost in

Once a worker at a swimming pool store, John Gross left all behind to pursue his dream of Hollywood animation and is now widely recognized for many Hollywood effects including some for "The X-Files" (right) and "Star Trek" (previous page).



the transition." I put in long hours, ate bad food, gained weight, and created.

I was happy. I was happy because I was doing something that I realized I needed to be doing. No matter how difficult the job was or how many hours I worked, I was happy.

I was driven. There was a burning in me to do what I am now doing. I wasn't happy at the swimming pool store where I worked before taking the computer plunge. I wasn't happy not being able to be creative, but I didn't even know it. One of the turning points of my life was when I saw Allen Hastings at a 1990 AmiExpo demo a program that would later be known as LightWave 3D. It was then that I knew I had to be involved with this whole thing. Everything since then has evolved from that moment.

So, how does this relate to the Hollywood experience for you? Well, here's what will be in store for you if you come out here to be an animator:

Expect to work long hours. There never seems to be enough time in the day to put that final finish on that great model you created. Don't be surprised if you find yourself welcoming people back into work in the morning because you were there all night.

Be surprised to see daylight. You won't get out often during the day and when you do, you'll feel somewhat out of place.

Expect to gain weight. You'll spend all day pushing a mouse around. What little exercise you get will be that walk to the kitchen to get some snack food. Oh yes, all production houses in Hollywood have garbage food in the kitchen.

Expect conflicts. Clients oftentimes don't share your artistic vision of a particular sequence. They often are not artists themselves and it may be difficult to relate to them efficiently. You will create the most fantastic animation and the

client will hate it, perhaps only because they didn't think of it first.

Things will go wrong. Machines will crash at the worst time. Your render will have errors. Clients will be waiting and you will be under stress.

Expect time constraints. Your significant other (if any) will be mad at you for not spending more time with him or her. Often.

All of the above assumes, of course, that you find a job out here. But you know what? If you want to be a tornado chaser, you go to the Midwest. If you want to be a great stage actor, you go to New York or London. And if you want to be a great LightWave animator, you go to where the LightWave jobs are. Yes, you can be a LightWave animator anywhere, but if you are driven, you go to where the biggest challenge is. Currently, that's Hollywood.

It may be difficult to get a job out here because your skills don't match what a company is looking for. You might not be able to work for one company for a long period of time because you're hired just for a specific project. Somebody else might come along who is better than you might be and get "your" spot. There may be periods of time where you're not working while waiting for your next "gig."

The upside of being an animator out here is that you get to work with some of the most talented LightWave artists in the world, who, in my experience, also happen to be about the nicest people in Hollywood (or anywhere else). You may get the chance to collaborate with some of the most brilliant minds in film and television (which does beat flying logos!), and there are a good number of jobs out here. If you are a somewhat decent animator, I'm confident you can get a job in Hollywood and make fairly good money doing it.

The field of digital effects is new enough

that no one can boast a long and illustrious career or claim graduation from a school of prestigious alumni. In Hollywood, we are still pioneers and the qualities by which we are measured are ambition, a drive for perfection, and, of course, the ability to follow the directions of a producer, no matter how misguided or indecisive he or she may be.

We put up with a lot for our art, don't we? But' historically' artists have always suffered. I can endure 100 stereotypical Hollywood clients for the pleasure of collaborating with a single one with the vision that affords me the opportunity to create something really spectacular. These are the types of clients that are no longer clients, but rather comrades in art. The excitement of working with people like this gives me such a rush that it makes up for the others. Luckily, Digital Muse has the pleasure of dealing with several such comrade clients.

The bottom line is this—if you couldn't be a LightWave artist, what would you be? If you can give me any other answer, then I would say that's what you should be doing. But if you have that drive and you won't be happy doing anything else, then for God's sake, you need to be animating! The reward of being an artist is in the art itself, not in the money you can make or the credits you'll receive. Don't get me wrong, those things can certainly be achieved, but if that's solely what it's all about for you, then the challenge of being an artist in Hollywood might not be right for you. That sounds more like you want to be a producer!

John Gross is happy living in Hollywood. He is co-owner of Digital Muse, a Santa Monica-based digital effects facility.

Flying High

TIPS, TECHNIQUES, TUTORIALS, AND SHORTCUTS FOR YOUR VIDEO TOASTER FLYER PROJECTS

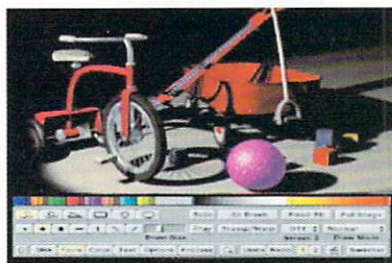
BY JOE
TRACY

State of the Flyer Address REDISCOVERING THE POWER



My fellow Video Toaster Flyer owners, colleagues, and other interested parties: For many years NewTek's Flyer has been a prominent force in thousands of video

production houses. It has brought the "fun" back into editing and has created a whole new breed of professional users and artistic geniuses. Yet even though the Flyer is as revolutionary as the Video Toaster, when it paved the way for the desktop revolution as the leader of the pack, some would make it out to be a toy or non-competitor based on PC standards. To that I say, "wake up!"



The Flyer is a complete TV studio in a box.

A Flawed Mentality?

Years ago, when the Flyer was introduced to the market, those with an agenda sought to discredit it. Yet to discredit it, they had to attack the features. So this is what they said:

1) Dual-stream video is not important.

2) Real-time effects are not important.

3) An integrated "studio in a box" package is not important.

4) The Amiga is a "dead" platform.

Some of these same people have gone on to produce PC systems that are just today starting to incorporate some of the powerful features that the Flyer has had for years. Now they say the following:

1) Soon we'll have dual-stream video!

2) We have decreased the rendering time of effect playback and will soon have real-time effects!

3) We have a CG and Paint program with our package, which you need!

4) The Amiga is a "dead"

platform.

In the first three instances, the same people who discredited Flyer features as "unimportant" are now heralding the fact that PC systems with these capabilities are "revolutionary!"

To that I say let's not forget who started the revolution and who had these features first back when they were called "unimportant." If you want to go head-to-head with the Flyer, I'll gladly put it against any system any day of the week. And if you want to talk about head-to-head comparisons, all you have to do is look at the 1996 Olympics held in Atlanta where the Flyer was clearly the "gold medal" winner among the international press, who would wait in line to use the Flyer while

COMMENTS OR
SUGGESTIONS

email:

jtracy@

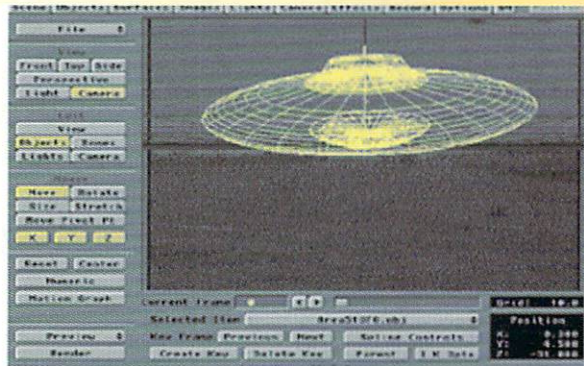
advanstar.com

5) Because the "dead" Amiga was the most stable of all the systems there!

So what do I use for my business applications? A PC. What do I use for my Internet connections? A PC. What do I use for my desktop publishing needs? A PC. What do I use for my LightWave 3D animations? A PC (except when integrating animations with Flyer clips). The PC is by far superior to the Amiga in all these areas and many more, so I use it for those applications. But the PC

I furthermore would encourage NewTek to take a long and hard look at how the Flyer is marketed to the video production world. In the December issue of *NewTechniques* magazine, there is a full-page article on the Flyer's prominent use in the 1996 Titanic expedition. By taking out Flyer ads similar to the LightWave ads, which shows the software being used in interesting applications, like the Titanic expedition, it builds the reputation of the system and helps sell it to new users. High-profile Flyer applications need to be publicized!

If you own a Flyer system, you have what it takes to produce the most professional applications on the market today. Even major Hollywood companies are using the Flyer to help produce some prime-time network TV shows that you watch and even some morning show programs! Unfortunately, these same companies are "too embarrassed" to publicly let us talk about it.



Even Mark Stross lost a bid at a major multi-million dollar contract, with a nationally known firm, when a representative of PlayableTV told the potential client that the Amiga was the processing unit behind PlayableTV's amazing power! Once the word "Amiga" was mentioned, all communications immediately ceased. Like embarrassed companies doing network TV work with the Flyer, Stross must now make an effort not to sell PlayableTV's technology based on the computer platform it runs on (and the Toaster/Flyer inside of it), but rather sell it all as a "revolutionary" unit with no mention of the words "Amiga" or "Flyer." Imagine if LightWave was treated that way and we could never address how it was used (or even that it was used) in movies and shows like *Titanic*, "Babylon 5," "Hercules" and so on.

I stand before you today to say that the company that started the video revolution, NewTek, is not going to abandon it even in the face of political attacks from all fronts. And NewTek's new efforts at bundling and pricing strategies

I encourage you to take time to rediscover the amazing power of your Video Toaster Flyer system and to once again remind yourself, by using it, what an awesome and powerful production environment you have. And while you're at it, press that LightWave 3D button and enter into a whole new world where, like with the Flyer, you are the director, producer, writer, and genius. The power of production is yours.

LightWave 201

A UNIVERSITY-LEVEL COURSE WITH INCREASINGLY DIFFICULT LIGHTWAVE TECHNIQUES



BY SCOTT
WHEELER

The third installment in
the second level of
LightWave courses
—"LightWave 201."

Project Bird:

LITTLE LONG HOUSE IN THE WOODS

Welcome back. It has come to my attention after the past few articles that some people have been having trouble seeing some of the details of the figures. To help with this, I will be placing the figure images from each article on my Web site. You can also find them at www.newtekniques.com.

This month we are going to move back into Modeler and make an Indian longhouse. As I mentioned in the last article we will be using VertiLectric to make the wood beams. I hope you purchased this fine plug-in. If not, enjoy the article anyway.

1. To start with, let's set our Modeler up to the same specs. Open Display Options [d] and make sure that Unit System is set to Metric, Default Unit is set at meters, Grid Units is set to (1m, 2.5m, 5m) and Grid Snap is Standard. Close the Display Options panel [return] and zoom back the display [.] until the Grid is 2.5m.

2. We can now construct what will be the mud layer that holds the wood together. Since most of the detail of the model will come from the wood we will add later, this object will not need to have a lot of detail. In Layer 1 [1]

activate the Ball tool [C] and open its numeric requestor [n]. Enter the following values: set Ball Type to Globe, Sides to 24, and Segments to 12. Make the center (0m,0m,0m) and the radius (3m, 3m, 0m). Close the requestor [return] and make [return] the Ball. To finish off the elevation, we need to make sure we are in points mode [Ctrl-g] and then lasso select [right mouse button] all the points below the zero line on the Y-axis and cut [x] them. You should now be left with a half circle that looks like Figure 1.

3. Next we need to extrude [shift-e] our half circle. Open the numeric [n] requestor and set the Axis to Z, the Segments to 1, and the Extent to 10m and close the requestor [return]. Make [return] the extrusion.

Deactivate extrude mode [spacebar].

4. We now have a 10-meter long hut with no way to enter. To rectify this, let's go to Layer 2 [2] and make Layer 1 the background layer [Alt-1]. In Polygon mode [Ctrl-h] zoom in [.] until the grid is reads 1m. Activate Create Points [Shift-=] and plot out a door 1.5m high that resembles the door shape in Figure 2. Don't worry about being exact. Any door that you make will be fine. Besides, you're the one who is going to have to match it later. To cut our door into the hut, let's toggle the layers ['] . In Layer 1 lasso select the front poly of the hut. With just the front polygon highlighted, activate Template Drill [Shift-r]. Change the Axis to Z and the Operation to Slice. Clicking OK should slice the



Figure 1

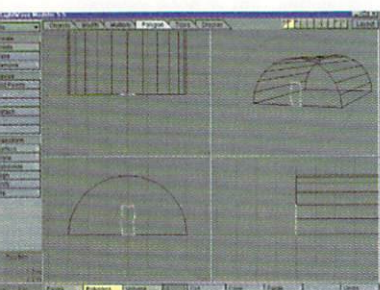


Figure 2

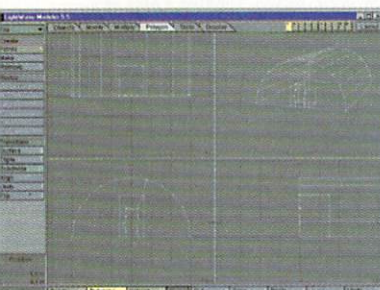


Figure 3

door shape from Layer 2 onto the front polygon on Layer 1. In the Face view, deselect the front polygon, leaving the door poly highlighted. Cut [x] the door out.

Name the polys [q] in Layer 1 LongHouseWood. Just to be neat, let's delete [z] the door from Layer 2.

5. To finish off this phase, we need to add a box inside the door to mask the interior that we won't be building. This way, if you get a look through the door, it will just appear to be dark inside. On Layer 2 [2], make a Box [Shift - x] with the following values:

LOW (-60cm,0m,0m)
HIGH (60cm,2.1m,1.5m)
SEGMENTS (1,1,1)

Flip [f] the polys of the box so they face in. Name the box surfaces [q] LongHouse Interior. To merge the two pieces, cut [x] the box from Layer 2 and paste [v] it into Layer 1. Your object should look similar to Figure 3. Save [shift - s] the object as LongHouse.

6. The first step in adding wood to the side of our LongHouse is to create copies of the points that comprise the hut on a work layer. To accomplish this, select a point from the door in Points mode [Ctrl - g] and select all connected points [j]. Copy [c] these points and paste [v] them into Layer 2.

7. On Layer 2, zoom back to fit the whole hut on screen [a]. Lasso select [right mouse button] the points that make up the rear of the hut (those points at 10m) and hide [-] them for use later. We are

now ready to start laying down the logs.

8. First let's create the arched ribbing. VertiLectric will allow us to select a series of points in a row to use as a path for our logs. This makes it easy to create logs that conform to whatever part of the hut we are working on, saving a lot of modeling time. Activate Points Mode [Ctrl - g], in the Face view. Select the arch of points that define the roof line. In the Objects tab, click on the Custom button to bring up a list of plug-ins. Near the bottom of the list you will find VertiLectric. To select this plug-in, release the mouse with VertiLectric highlighted. To make a good shape without being costly in polygons, enter in the following values:

Segment Unit	Length
Segment Length	10cm
Subdivide Level	2
Sides	5
Start Radius	7cm
End Radius	7cm
Twist	0.03
Branches	0
Shape Seed	5466
Random	
Shape Seed	Unchecked

We are not creating any branches, so the other values are not needed. Also, we will be making our logs with five sides for two reasons. We won't be getting too close to the hut so we can make it poly light; and three sides would not give LightWave enough surface information to smooth the edges away in rendering. Click OK and VertiLectric will create the arch. Let's complete the arch by defining the wood surface [q]. Name the surface Logs,

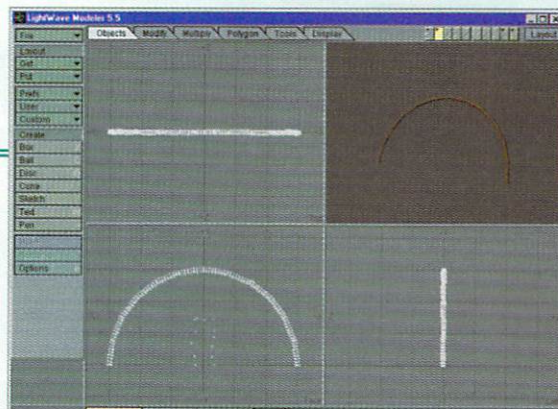


Figure 4

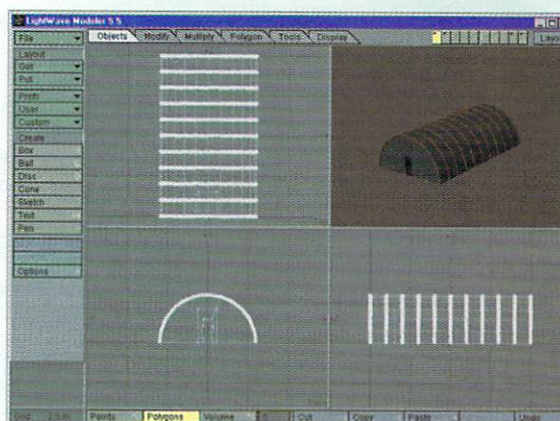


Figure 5

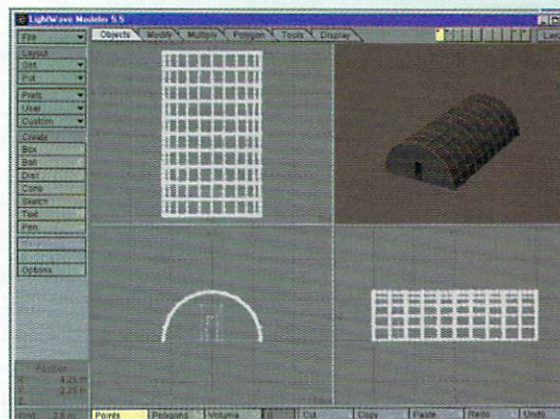


Figure 6

assign it a Color value of (R:120,G:92,B:54), and turn on Smooth. Your arch should now look similar to Figure 4.

9. Activate Polygon mode [Ctrl - h] and pull up the Statistics panel [w]. We only

want to select the Log surfaces, so make sure the pop-up at the bottom of the panel reads Log. Above the pop-up is a field marked with Surface. Hitting the plus sign next to the field will select only those polys named Log.

10. We have made one brace for the roof. To make the hut actually look like it could stand up, we need to add one brace every meter down its length for support. We need to Clone [Ctrl - c] our arch 10 times with a Z-axis offset of 1m, leave all other fields as they were and click OK. Size the view to show all [a]. In the Polygon Statistics panel, click plus on "with Surface" a second time and all the arches should highlight. Cut [x] these from Layer 2 and Paste [v] them in Layer 1. Layer 1 should now look like Figure 5.

11. With the arches in place, we can add the major cross members onto the hut. To do this we need to go back to Layer 2 [2] and show all hidden items [\]. The points we hid earlier should now reappear. Activate Points mode [Ctrl - g] and select in the Face view the points on the arch in the 3 o'clock position. Notice that since Modeler will select all points down the Z-axis in the Face view, we can get the points in the front and the back of the hut in one click. Select the VertiLectric plug-in again, change the Twist to (0.01) and Segment Length to (30cm). Click OK. Repeat this process in a counter clockwise sweep along the arch until you reach the other side. Activate Polygon mode [Ctrl - h] and assign [q] all

the polygons on Layer 2, the Logs surface. In the Polygon Statistics panel select all the Logs polygons and cut [x] them from this layer and paste [v] into Layer 1. Your model should now look like Figure 6.

12. Return to Layer 2 [2]. Activate Points mode [Ctrl - g]. For this phase we need to rehide [-] the polygons on the back of the hut (10m). Now let's add a wood frame around the doorway. To do this, select the points that make up the door in counter clockwise order from the lower right side. Remember that it is important that you select them in order since VertiLectric will use this as a path to trace the door. Activate VertiLectric and use the current settings. Surface [q] all the polys as Logs. In Polygon mode [Ctrl - h], use the Polygon Statistics panel to cut [x] all the polygons in Layer 2 and then paste [v] them into Layer 1.

13. Back on Layer 2, we need to do a little point rearranging before we add the cross members to the front of the hut. In Points mode [Ctrl - g] select the points that comprise the arch in the Face view and copy [c] them. In order to create a base for the framework on the front of the hut, we need to move the selected arch points to the base of the hut. We do this by setting their

value [Ctrl - v] on the Y-axis to (0m) and then pasting [v] back the old points. Use these points and the points on the doorway to create the wood beams in Figure 7. Rename the polys Logs and cut [x] them from Layer 2 and paste [v] them into Layer 1.

14. Back on Layer 2 again, use the points we created to make a pattern that matches Figure 8. Then add these polys to the model on Layer 1.

This takes us to the end of the article portion of the building process. Starting in this article, I am trying out a new teaching technique: *homework*. Figure 9 and Figure 10 show the model that you should get to at the end of your homework. Your assignment is to take the processes that you have learned in this article to add smaller logs to the inner portions of the boxes defined by the structural members we created. Also take a stab at adding the covered area to the front of the hut.

Along with larger versions of the graphics in this article, I will be placing the finished object on my web site www.uberfx.com, so you can use it as a guide for the homework. Try not to download it until you have taken a stab at it yourself. This is supposed to be a learning thing, after all.

As always, I am available at my email address: uberscott@uberfx.com.

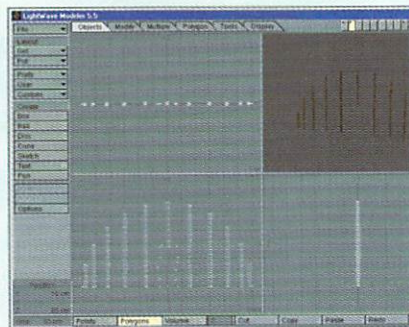


Figure 7



Figure 8

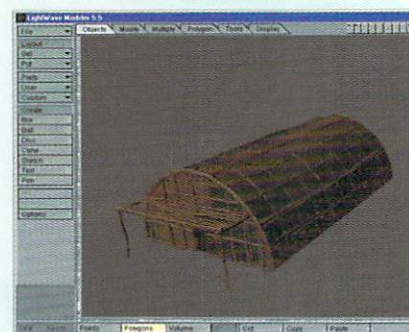


Figure 9

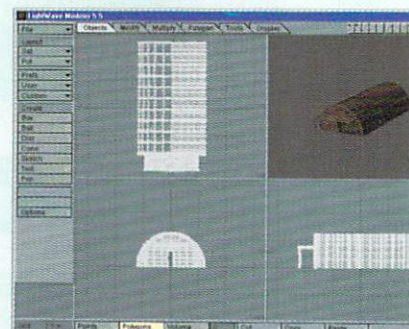
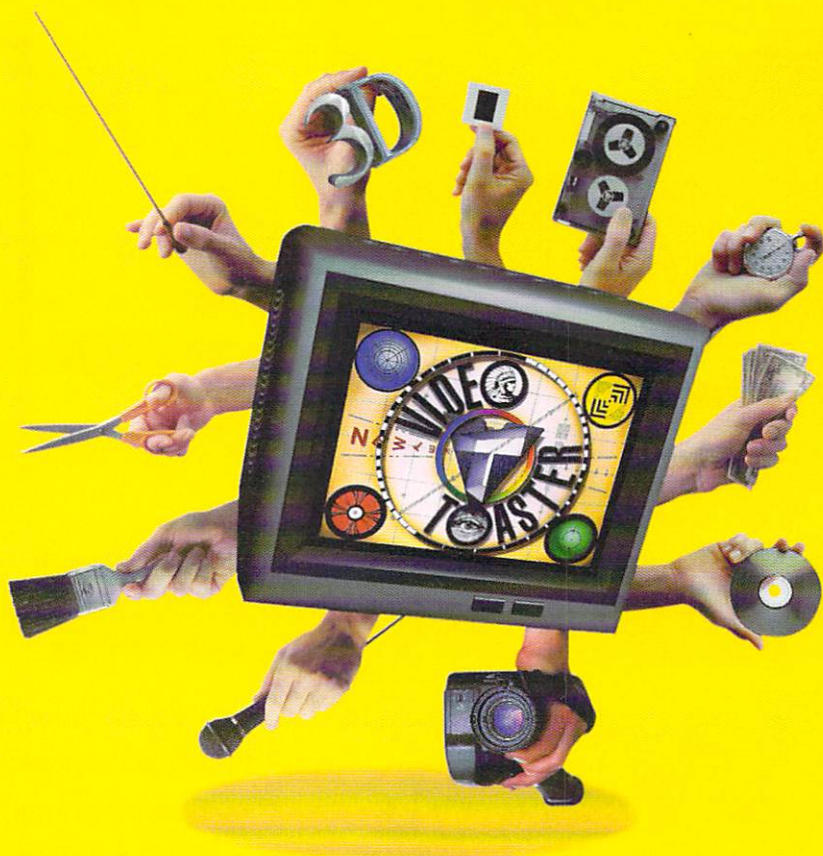


Figure 10



When it comes to all-in-one professional video editing, it's the hands-down winner.

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WAVE F/X

LIGHTWAVE SUCCESS IN THE COMPETITIVE TV & FILM F/X MARKET

More than just children are being sucked into Barney's new adventure, including Tom Williamson.

Particle Magic

BY TOM
WILLIAMSON

BARNEY'S GREAT ADVENTURE

What do CGI smoke, fish, flames, dust, bees, water, and pixie dust have in common? Particles! This issue's featured effect also could be added to that list: VFX-82 from *Barney's Great Adventure*. (Yes, I worked on the Barney movie, now back off, man.) The script called for a character named Twinken to shower a house with "magic." Working with director Steve Gomer and post-production supervisor Robert Hoffman, a look was established for the "magic" and we got to work.

The Set Up

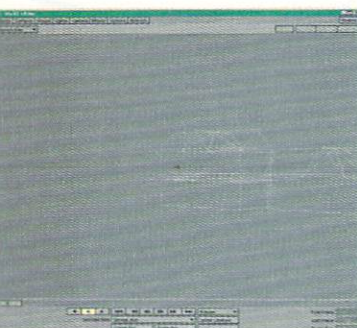
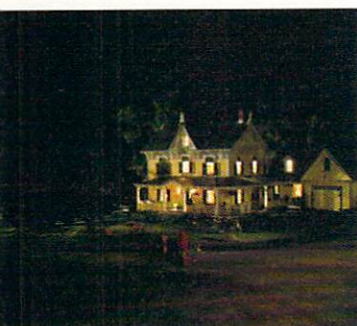
Computer Café was called in fairly late in the production and the shot already was scanned, so getting the background plate was a simple matter of being handed an Exabyte tape (I wish it was always that simple). We restored the footage and formulated the attack plan: build a "proxy object" (more on that later), set up the particles, render them against black, and composite the particles on the background plate with some effects. Our first reaction when we saw the plate was that it was very dark. It was likely that the shot would be printed up later, and because the effect we were going to be adding was primarily pale yellow and white, we needed to treat the footage. If we had just added our effect on the dark footage, it would have been com-

pletely blown out when it printed up, wasting our hard work. We ordered a wedge from production and used a select frame to adjust the footage. Using Digital Fusion's brightness/contrast tool we boosted the gain and balanced the footage to something very close to what was needed. Any changes to the shot now should be minimal and we can rest assured our effect will look the way we created it. We also took the time to "dust bust" and added stars to the shot. Now we needed a proxy object as a particle collision object. This was to give the particles the appearance of bouncing off the roof and ground. Bryant Reif (the primary artist on VFX-82) loaded up a frame of the background in a viewer and used Modeler to build a very crude approximation of the house. The model was essentially

a lot of planes representing both levels of the roof and the ground. The model was loaded into LightWave along with the background plate and it was time for the particles.

Lots of Little Specks

Working with particles is an art form. You must have a very good understanding of the particle system to achieve predictable results. Although we have a few particle systems, Particle Storm was selected for this shot. After placing a null in the scene for parenting the particle emitters, young Reif (he hates when we call him that) started up the Particle Storm plug-in. A total of two emitters were needed to get the "magic fountain" the director wanted. While experimenting for the shot we tried a couple of dif-



The particles were rendered against black. The house proxy object was set to render the same black as the background to act as a placeholder for the real house.

ferent approaches: a shower of particles that tended to hug the contours of the house and a billowy burst of particles to add volume. The settings for two fountain emitters spewing out 2,000 particles each were as follows:

min spread = 0
max spread = 250
init speed max = 0m/s
init speed min = 3m/s

Gravity 2

The particle shader started white and faded to deep gold color over 4=four seconds. Alpha faded out particles in the last 20 frames. Alpha was partially faded out in the very beginning to help avoid the core of the emitters from looking totally blown-out white.

Four Collision Objects:

1. Top_roof.lwo was loaded into particle storm as collision obj. Object tripled seemed to help with collision detection. Collision obj parented to itself in Particle Storm to ensure that it matched up perfectly to the obj that was carefully positioned in LightWave. Elasticity = 30%, Roughness = 20%

2. Bottom_roof.lwo (same as above)

3. Side_roof.lwo (same as above)

4. Box_collision shape. X=12m, Y=.004m, Z=12m placed at ground. Elasticity = 20%. Roughness = 80%

The second element was set up slightly differently. All the settings were the same as particle element 1, except the gravity was set to 1.5, the initial minimum speed was set to 1, and the initial maximum speed was set to 2. Oversampling was cranked up to 20 to ensure that all the particles detected collisions.

With all the settings made, the particles were rendered against black. The house proxy object was set to render the same black as the background to act as a placeholder for the real house.

The elements were rendered at 2048 x 1556 with square pixels. The anti-aliasing was set to enhanced medium. Motion blur and particle

blur were turned on and the blur length was set to 100%. The lens focal length was set to 27mm. After the rendering was completed, we had two sequences of black frames with showers of particles. It was decided that a combination of both approaches looked the best so both sequences were used in the final composite.

Compositing

The next step was to composite the particles on the background. We opted for Digital Fusion for this shot. After loading in both the background plate and the particle sequences, a series of filters and effects was set up in the flow. After setting up the loaders for the background and the particles sequences we ran the footage through the following tools:

1. Glow-Gaussian, Glow size = 25, Blend = .2, Glow = .8933. This gave the particles a nice soft subtle glow. Used effects mask over center of particle source so as not to create a white hot spot.

2. Color Gain-Increased red and green gain gave particles warm gold color.

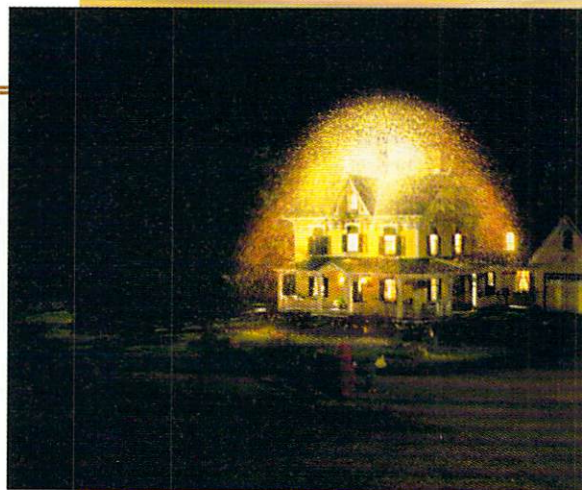
3. Brighten-Added to background plate with an effects mask to brighten plate in areas around the particles to help integrate them into the scene.

4. Merged treated particles over background plate. Additive = 1, Alpha Gain = 0. No Alpha for particle element was necessary.

The final frames were rendered at 2048 x 1556 and saved as SGI RGB (24-bit, uncompressed). Once all the frames were ready, they were put on Exabyte tape and sent off for film out.

With the power of particles we pulled the shot off. I know that the majority of you may not go see this movie (you parents out there are the exception), but there are a few cool effects in it. Even the adventures of Barney are no match for the power of LightWave.

Tom Williamson is effects supervisor for Computer Café Inc. He's not afraid of big purple dinosaurs. Reach him at tom@computercafe.com



The goal was to create a shower of particles that tended to hug the contours of the house and a billowy burst of particles to add volume.

Terms of the Trade

Printed Up - To brighten a shot optically by adjusting its exposure.

Wedge - A sequence of exposure tests on film to determine the proper look of a particular shot.

Select Frame - A frame of a wedge that is determined to be correct.

Dust Bust - To remove all the little dust specks and imperfections from a frame.

Reviews

CANDID OPINIONS ON THE LATEST PRODUCTS AND PLUG-INS

BY MIKE MASSEE

Genesis VFX for LightWave 3D

I had never heard of Positron Publishing, Inc. until somebody pointed out a really cool-looking Web page (www.genesisfx.com) showing off a new plug-in with some awesome particle shading effects. Eager to stretch the boundaries of LightWave 3D's rendered output, I purchased an Intel and Alpha copy for use on my mixed rendering farm.

Genesis VFX is a multi-software, multi-platform plug-in, currently available for LightWave on the PC and Alpha processors. Genesis VFX is also available as a plug-in for Adobe Photoshop and 3D Studio MAX. The LightWave version builds on the basic tools provided in the Adobe Photoshop

After you add the plug-in into LightWave, it is accessible through the image filter plug-in list in the Effects panel. Once loaded as an image filter, Genesis adds a button to the top of the LightWave screen, near the Modeler button, for easy access (see image at left). The first time you run it, the software generates a pre-activation code based on your dongle number, similar to Steve Worley's Gaffer plug-in. I provided that number to Positron, who immediately returned with a code that enabled the software.

It takes less than a half hour to understand the program interface. A row of buttons toward the bottom selects what appears in the main control area of the interface. There is also a completely separate screen for editing individual effects.

Genesis VFX can be used to create all sorts of particle effects including, but not limited to, flares, sparkles, glows, heat distortions, 3D particle clouds, gas clouds, explosions, missile contrails, and, as the manual states, "even flowers!" Genesis accom-

plishes this by using the position of your particle objects in LightWave as a reference for painting its own material into the render buffer. Genesis even supports Z-buffer information for scaling its effects.

You can basically turn off the visibility for that object in LightWave and rely solely on Genesis to regenerate the visuals for your particles, or you can use Genesis to augment LightWave's existing shader system.

It is important to state that Genesis not only works with particles, but with standard polygons, as well. You can apply certain effects such as glow, smoke, and fire to entire objects. The rendering time increases exponentially, however, due to the almost volumetric nature of the calculations. It is well worth the wait.

Genesis VFX comes with many preset "GFX packs" full of neat-looking effects ready to be applied to particles and objects. Lots of lens flares, photon torpedoes, and gaseous nebulae are among the files to be found. More GFX packs are available

LIGHTWAVE 3D TOOLS

Genesis VFX

NewTek's Inspire 3D

CONTACT INFORMATION

Genesis VFX

\$419.95 Intel

\$469.95 Alpha

Web:

www.genesisfx.com

Mail:

Positron

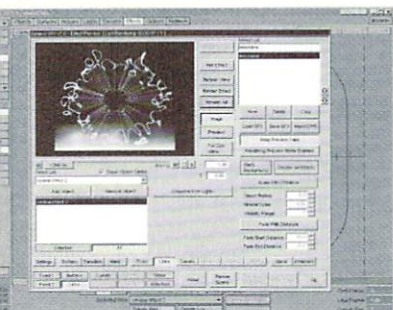
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Circle #188



Genesis VFX stretches the boundaries of LightWave's rendered output with cool particle shading and filter effects.

version. The LightWave plug-in comes with two manuals—the basic Photoshop and MAX instructions, and a slightly larger companion manual specifically related to interfacing with LightWave. The manuals are good reference, but they are lacking in tutorials.

from the Genesis VFX Web page. Users can design their own effects, then upload them for other people to use.

The Genesis people provided extremely responsive tech support when I had problems. The first time I tried a major render with Genesis using ScreamerNet, all of my nodes crashed due to memory leaks. I sent them my scene file, and the very next day they had a new patch fixing the problems. Genesis was a very new product at that point, so I was patient with those kinds of problems. It seems to be quite stable now, as it has been through several patches.

Genesis VFX retails for \$419.95 for Intel, and \$469.95 for Alpha.

BY JEAN-ERIC HENAULT

Inspire 3D

It seems that NewTek has put a lot of effort in discouraging the characterization of Inspire 3D as "LightWave Lite." I see why and you soon will, too. But I must admit that when opening Inspire 3D for the first time, I was struck by the resemblances between the two programs. After all, the powerful features we expect to find in LightWave 3D are also found in Inspire 3D, from MetaNURBS in Modeler to lens flares and glows in Layout. The similarity was so close that I couldn't resist loading one of my most complex LightWave scenes—a futuristic cityscape. It loaded perfectly! I hit Render and the output appeared identical to LightWave.

NewTek really has put a lot of effort in developing Inspire 3D. The company literally developed the program around a new targeted market referred to as the "new media" professional.

According to NewTek's marketing research, "new media" professionals are the fastest-growing

Inspire 3D is probably the first high-end 3D solution designed for graphics artists usually working with 2D graphics packages like Adobe Illustrator, Photoshop or QuarkXPress. These people expect high-quality output, and this is what they get with Inspire 3D. (It can render single images at up to 8000 x 8000 pixels for print, while rendering animations, image sequences, or Web pages at more modest multimedia resolutions).

Graphic artists (and "new media" professionals) also need something that is easy to use and to learn. And this is where Inspire 3D gets fun.

NewTek really went out of its way to make Inspire 3D as easy to learn as possible. So it developed (through the Epic Software Group) "3D Interactive," a second CD included with the Inspire 3D package.

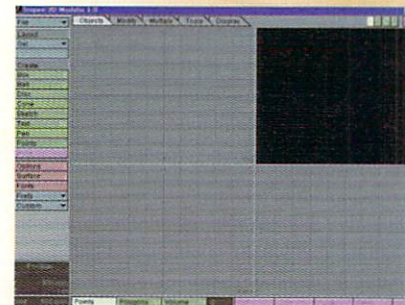
Essentially, 3D Interactive is a fully interactive Inspire 3D tutorial. This tutorial includes video, music, narrations, animations, and even some games. This is probably the most spectacular and complete interactive docu-

ment I have ever seen. Consider it the Encarta for the 3D world. It includes an historical time line of the 3D world and its evolution, tips on finding a job in the new media industry, and even how to assemble a demo reel. It's all there. This tutorial CD is so good, in fact, I highly recommend it to someone wanting to learn LightWave for the first time.

Inspire 3D comes packaged with a reference manual and a user guide. I also was surprised to find a few other goodies that come with the Inspire 3D program that don't yet exist on LightWave, such as QuickTime savers for the Intel version and support for industry-standard Photoshop filters. However, some tools are missing, like IK in Layout. Image Filter plug-ins are limited to two, and in Modeler, you are limited to four layers.

Even with the things missing or limited, I found this to be an extremely powerful package capable of producing Hollywood-caliber graphics at a n affordable price.

I also believe that many LightWave users will want to get



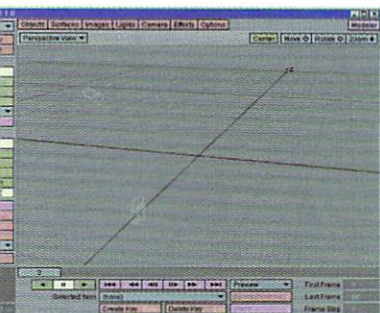
One of the first things you notice about the Inspire 3D Modeler is the bright-color buttons and similarities to LightWave 3D.

a copy of Inspire 3D. It could be used on a second machine, for example. And since LightWave and Inspire 3D share the same scene and Objects formats, you can bring your work home with you. It certainly is not "LightWave Lite" and it should not be considered as LightWave's kid brother, but rather as its twin-brother, with an attitude.

People who will use Inspire 3D will later be able to upgrade to LightWave, and feel right at home. Since LightWave and Inspire 3D share a very similar architecture, most plug-ins should work on both. This new, larger user base should attract a lot more developers and give reinforcement to the existing ones.

I am blown away by this product. Inspire 3D, aimed at print artists, Web developers, CD-ROM authors, and other new media professionals, is a very potent product, especially at \$495.

Expect to see it widely available (maybe even discounted) in computer retail stores next to other popular graphic products like Photoshop and CorelDraw. If this is the new NewTek, the future is very encouraging.



Complex LightWave scenes also can be loaded into Inspire 3D's Layout.

segment of the 3D universe. Although today's market is dominated by professionals working in the broadcast, film, and games industries, NewTek research found out that there is a rapidly growing demand from business professionals for 3D graphics for corporate presentations, Web site and interactive development.

Tutorial

A STEP-BY-STEP GUIDE TO CREATING MORE PROFESSIONAL PRODUCTIONS

BY DAVE JERRARD

Growing realistic trees
in LightWave 3D.

Trees It's a Breeze!

You've just spent the last few weeks tweaking the details of the recreation facility your client had you build in LightWave 3D, and everything looks great! The clas-

sic black trim around the windows, the smooth-formed concrete walls, the grassy lawn in the playground—everything looks real enough to touch, ready for that animated walkthrough. But wait! At the last minute, he walks in and says, "Everything's great, but can you add a few trees here, and here?" A few trees? A FEW TREES? Gee, does he want them to have leaves blowing in the breeze while you're at it? "Great idea! We can start the walkthrough from under a big tree here, and walk up to the main entrance." Well, so much for cheating your way through by using panels mapped with tree images. These have to look real from all sides now! The big question is *how*? You've come to the right place for the answer.

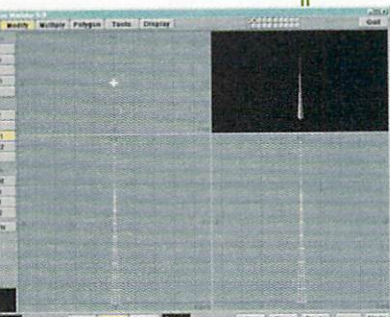


Figure 1. The tree trunk, after applying a taper to the midsection.

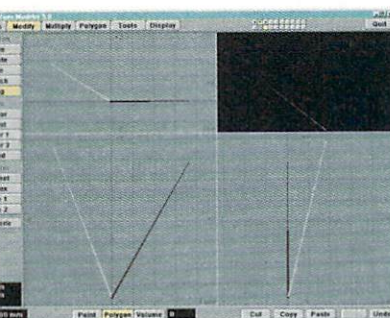


Figure 2. The first branch split.

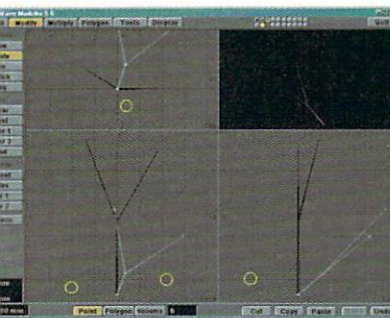


Figure 3. The yellow circles indicate the locations the rotate tool was centered on.

1. First load up Modeler. The majority of the work will be done here. Size and position the grid so you have about eight meters of space above the ground plane in the front view.
2. In the Top view, use the Cone tool to drag out a box, approximately half a meter square. In the Front view, stretch this box so it reaches from the ground plane up to the 8-meter mark on the Y-axis. Bring up the Numeric panel by typing "N" and enter a value of 4 for the Sides, and a Segment value of 10 or more. The higher the number of segments, the more detailed the tree will become. Click OK, and hit the Enter key to make the cone. This will be our tree's trunk.
3. Select the Taper 1 tool and hit the "N" key to pull up its numeric requester. Set the Axis to Y, Range to Automatic, and Sense to +. Click on the Ease Out button to activate it. Type in a Factor value 2, and make sure the center fields are all set to zero, then hit Apply. This will thin out the middle portion of the trunk a bit, making the final object a bit better looking (see Figure 1).
4. Zoom in to the top segment of this trunk. Select the polygons of the top segment, and type "X" to cut them out. Flip to an empty layer, and paste them there. Now, flip to a second empty layer, and paste them there as well. If you wish, you may also do this in a third layer, but for now, we'll just stick with two.
5. Select the top point of the segment in one of the layers. We're going to move this around a bit, and there are several methods that we can

use to do this. Since this is a single point, we'll just use the Drag tool for now. Use the tool to drag the point off center in some direction. You can use any view you want, but try to keep the angle of this segment within 45 degrees of vertical.

6. Once that is done, flip to the other segment layer and do the same, but in a different direction. Put the other segment layer in the background to make things easier to visualize. What we're doing here is splitting the top segment of the trunk into two small branches. Feel free to adjust the lengths of these segments so they are not equal. (see Figure 2).

7. Put both of these layers into the foreground and enter Polygon mode. Hit "W" to bring up the Polygon Stats panel. Select all polygons by clicking on the + button next to Total Polygons. Hit OK, then cut these using the "X" key. Flip back to the first layer, where the rest of the tree is, and paste the branches into it, then merge the points. You should now have a Y-shaped object, with a very long stem.

8. From here, things will get a bit repetitive. Zoom out a bit until you see the top TWO segments—the segment we just split, and the one immediately below it—and select these polygons. Use the Lasso to quickly select these. Cut these selected polygons,

and paste them into two empty layers.

9. Switch to Point mode, and select all the points, *except* the four bottom ones, in one of these layers. Simply dragging a lasso around the two previously made branches will do this effectively.

10. Again, we're going to split this branch. This time, we'll use the Rotate tool. One thing to be very careful about is to not move the four points at the base of these sections because they will have to line up with the points of the original trunk. With the rotate tool, place the cursor near the four unselected points in either the front or side view, and rotate freely. Don't rotate so far that the branch tips drop below the base, do it just enough to separate this layer from the other one. Remember not to constrain your operations to one view. Feel free to adjust the angle in any view (see Figure 3).

11. Switch to the other layer and repeat a similar modification on the other branch. Again, randomize the actions a bit. This will help prevent the tree from looking too symmetrical. Other tools may also be used to split the branches. Move and Shear also work well for bending the branches into shape.

12. When this section is done, cut both layers and paste them back onto the trunk and merge points once again. And again, zoom out

a bit, select the top three segments, and paste them into two separate layers. From here on, we'll repeat steps 8 through 12 until we either use up all the segments on the trunk, or we're satisfied with the shape of the tree. This may seem like a long, drawn-out process, but after you get the hang of the first few segments, it goes by pretty fast. When we get to the last couple sections, the number of polygons gets fairly large.

After about five of these split operations, the tree will start to look very tree-like (see Figure 4). About every third or fourth segment, place the cursor over a section, centered at zero in the Top view, and type an "E" or "R" to rotate the entire object 90 degrees. This also will help ensure that the branches don't get too symmetrical. This is the only time the bottom four points should be adjusted.

13. Once the tree is branched to your satisfaction, it's time to fix the trunk. As you can see in Figure 5, the final trunk segment looks a bit squashed. This is easily fixed by selecting all the points except the bottom four again, and merely moving the branches up. All that remains is to smooth out that four-sided trunk. First, save this object as tree.lwo.

14. Select the polygons of the trunk and the two branches above it, and cut them out.



Figure 4. The tree begins to take shape after six splits.



Figure 5. The final branch split placed on the trunk (left), then moved up (right).



Figure 6. The trunk and lower-most branches pasted into a separate layer.

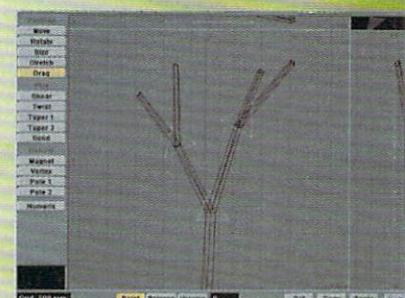


Figure 7. The placement of the polygons that will be used to slice the branch sections.

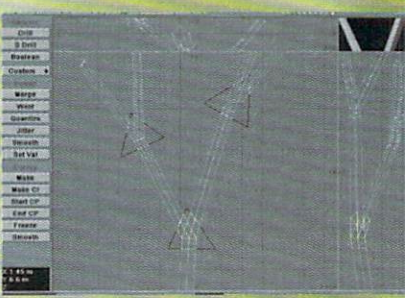


Figure 8. After slicing, select the branch bases and move them to a separate layer.

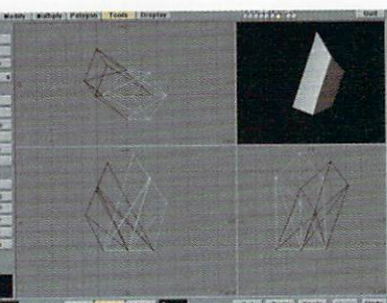


Figure 9. The branch stubs separated into their own layers, ready for the Boolean function.



Figure 10. A close-up of the base of a branch after MetaForming.

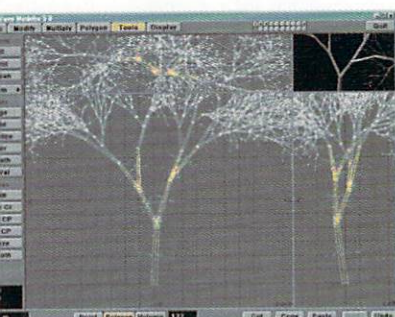


Figure 11. The selected polygons that will be smoothed with MetaForm.



Figure 12. The lower branches replaced onto the tree and then MetaFormed.

Paste these into a separate layer. If your tree has more large exposed branches above this section that may be seen clearly, cut these and paste them into this layer as well. We have to do a little cosmetic surgery on these branches before we can smooth them out.

15. Switch to a new layer, and place these branches into the background. In either the front or side view, whichever shows the branches with least overlap, create a simple polygon that fits around the intersections of the branches as close to their bases as possible. Usually a simple three-point polygon will do the job. Do this for each branch intersection (see Figure 7).

16. Swap layers by typing the '[' key. Go to the Tools menu, select the Drill tool and then select the Slice option. If you created the polygons from step 15 in the face view, then set the Axis to Z; otherwise, use X. Click the OK button, and the branches will be sliced near their bases. If you have any leftover branches that you couldn't slice because of their orientation, go back and follow the last

two steps, but use the other view instead. You should end up with something similar to that in Figure 8.

17. Once the branches have been sliced, select the newly formed polygons that make up the branch intersections (see Figure 8). Cut and paste these polygons to a new layer, then Triple them. Next, select the two branching stubs by dragging a Lasso around them, making sure the trunk section (or main branch) is left unselected. Cut and paste these into another layer. Now, select the polygons of one of these branches. Again, cut and paste these to a new layer. You should now have three layers, each containing a different branch stub.
18. Select one layer containing a branch stub, and put the other branch stub layer into the background, as in Figure 9. Type "B" to bring up the Boolean panel and choose Union from the list. Click OK and you should have both branches showing in the foreground layer. Merge points, then cut and paste this object back onto the base of this intersection. Merge the points again.

19. Go to the Polygon menu and select the Subdivide tool. Click on MetaForm, and then OK. You should end up with an object similar to that in Figure 10. Now we're getting a more organic look to this tree. Undo this, and move this section back into the original layer containing the rest of the lower branches. If you have more sections

to do, follow the last three steps for these as well.

20. Once you have all the branch intersections for these branches booleaned and placed back into their places, merge points again. Bring up the Polygon Statistics panel by typing "W" (while in Polygon mode). Watch for any polygons that contain more than four points. Click the "+" button next to the number labeled ">4 Vertices" and then OK. Triple these polygons by typing "Shift-T." Deselect everything.
21. Cut this object and paste it back into the layer containing the rest of the tree. Merge points, and then select the polygons at the very bottom of the trunk. Delete it since it is not needed. Now, using the Lasso, select all the polygons you just pasted into this layer again (see Figure 11). MetaForm these polygons using Subdivide-MetaForm. Do not use the MetaForm Plus plug-in for this, as it will not give the desired result here. For a little more realism, add a fractal value of 0.1 to 0.2 to the MetaForm function. This will roughen up the tree a bit, making it look a little more natural. Two passes of this MetaForm will be sufficient (see Figure 12).
22. At this point, you may want to resize the tree a bit, since all the modifications that have been done may have altered its height quite a bit. For now, scale it down to about 10 meters in height. Triple all the polygons and then type "Q" to bring up the Surface panel. Rename the

surface to "Tree," then save this object again. After surfacing in Layout, this tree is ready for any winter scene you have in mind. For the summer scenes, though, we need leaves.

18. For starters, switch to an empty layer. Under the Objects menu, select the Ball tool. Drag out a sphere centered at the origin, with a diameter approximately 1 meter. Make it about a half a meter or so in height. Type "N" to bring up the numeric panel. Make sure the Ball Type is set to Globe, and then enter a value of 8 for the sides and 4 for the segments. Click OK. We now have a rough sphere consisting of 32 polygons. Triple these since we'll be deforming this object a bit later. This should bring the total number of polygons to 48.

19. Bring up the Surface panel again by typing a "Q". Name this surface "Leaves" and hit OK.

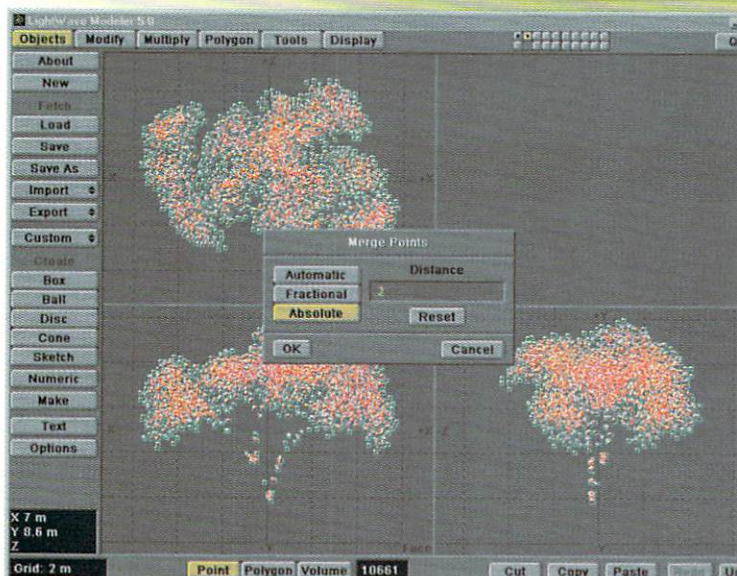
20. Switch back to the tree object we just saved. If you cleared it, reload it into an empty layer. In Point mode, select all the points except those that make up the trunk. Copy these to an empty layer. We're going to use these points to Particle Clone the sphere object we just created. First, we need to reduce the number of points, drastically. Select all points in this layer.

21. Type "M" to bring up the merge points panel. Switch to the Absolute option, and type in a value of about 0.1

meters, then click OK. This will remove several points that are close together. What we want to do is drop the number down to less than 1,000, so we'll probably have to perform this merging a few times. If the first merge doesn't eliminate enough, try again, but this time use a slightly higher value, like 0.15 meters or so. Since these points are selected, we will have an up-to-date point count displayed at the bottom of the screen (see Figure 13).

22. Once the points have been reduced to 1,000 or less, switch back to the layer with the sphere. Place the layer with the points we've been working on into the background, then go to the Objects menu and select the Particle Clone plug-in. If you don't have this, it can be downloaded from the NewTek Web site. A progress indicator will appear and after several moments, the sphere will be duplicated many times, looking much like foliage on the tree. All that remains is to delete the original sphere that still exists at the origin (see Figure 14).

23. Now we have a tree that looks like it has bubbles for leaves. We can fix that by applying a Jitter to them. Bring up the Jitter panel by clicking on the Jitter option under the Tools menu. Select Uniform from the list, and enter a value of 200mm for each numeric field. Click OK and in a few seconds, the display will update with



a much less bubble-like appearance (see Figure 15).

24. Save this object as Leaves.lwo and exit Modeler. The rest will be done within Layout itself, so load that up.

25. The first thing to do is to give our objects textures. Load in the Tree.lwo object. Open the Surfaces panel for the tree, and enter the values below. These create a good generic bark texture.

Surface Color: 156, 120, 90
Texture: Fractal Noise
Size: X:0.05, Y:0.05, Z:0.05
Color: 70, 50, 35
Frequencies: 3
Contrast: 2

Diffuse Level: 75%
Specular Level: 5%
Glossiness: Low
Smoothing: ON
Cutoff: 120 Degrees

Bump Map: Crumple
Texture Size: X:1.0, Y:2.0, Z:1.0
Falloff: X:20.0, Y:10.0, Z:20.0
Amplitude: 100%
Scales: 8
Small Power: 1.0
Texture Opacity: 100%

Figure 13. Selecting the points before merging will provide an up-to-date point count at the bottom of the screen.



Figure 14. After Particle Cloning, delete the original object located at the origin.

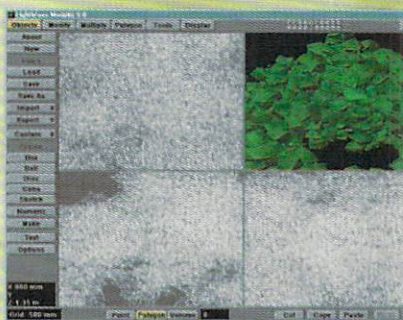


Figure 15. A close-up of the leaf spheres after a slight Jitter.

Tutorial

We're using Texture Falloff on the bump map to simulate the smoothness of newer growth while keeping the trunk and lower branches fairly rough. Since our tree is about 10 meters tall, a falloff of 10% per meter on the Y-axis will ensure that the upper branches will remain smooth. Likewise with the X and Z-axis. Save this tree again so you don't lose the texture.

31. Load in the Leaves.lwo object and select the surface for it on the Surfaces Panel. We'll give this a simple leafy green texture. Again, here's a good set of values to get started with.

Surface Color: 50, 155, 65
Texture: Fractal Noise
Size: X: .05, Y: .05, Z: .05
Color: 130, 140, 50
Frequencies: 3
Contrast: 1

Diffuse Level: 75%
Specular Level: 30%
Glossiness: Low
Reflectivity: 8%
Smoothing: ON
Cutoff: 120 Degrees
Double Sided: ON

Bump Map: Crumple
Texture Size: X: 0, Y: 1.0, Z: 1.0
Amplitude: 100%
Scales: 4
Small Power: 0.75
Texture Opacity: 100%

If you were to do a test render now, your tree would still look a bit weird, but better. Save all objects so we don't lose the textures. Now let's finish it off.

32. Open the Objects Panel for the Leaves object. Click on the button for Clip Maps and choose the Veins texture. Use a Texture Size of about 0.2 to 0.3 meters. Set the Texture Value to 100% and Coverage to 0.2. Enter 0.2 in the fields for Ledge Level and Ledge Width as well. Give this a bump strength of 1.0 and do another test render. This time, you should have a very leafy tree. Save the scene as Tree.lws so you don't lose the clipping information. It would also be a good idea to parent the leaves to the tree before saving the scene.

What happened is we've used the Veins texture to cut random strips out of the leaf "spheres" to simulate clusters of leaves. Veins works particularly well for this since it creates wedge-shaped sections, which have a remarkable resemblance to leaves. The bump value helps to add a slight highlight to the edges of these leaves, making them seem to have thickness. A larger texture size will make the leaves appear larger and fewer while a smaller texture size will make many more smaller leaves, so experiment with this for the look you like. Also, a higher Coverage value will increase the spacing between leaves and make them appear smaller.

If you really want to have fun, you can animate the leaves growing over time. To do this, we just use an old LightWave feature most people have forgotten—the Polygon Size control. By ramping a Polygon Size envelope from 0% to

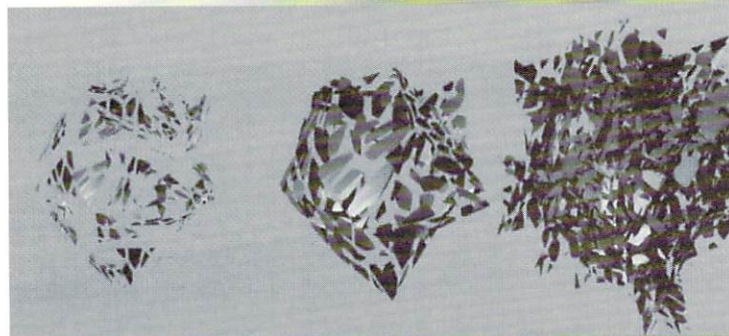


Figure 16. A single leaf cluster showing the effects of changing the Polygon Size value. From left to right, a polygon size of 50%, 100%, and 200%. Note the way the polygons overlap at values higher than 100%.

100% over a series of frames, the tree will go from a barren leafless wintery tree to a full summery shade tree (see Figures 16 and 17). You can use values higher than 100% to thicken the leaves if you find them to be a bit sparse. Just remember if you increase the polygon size, the clip values will increase with it, so you might want to reduce the clip size.

You can also simulate a breeze rustling the leaves by moving a fractal bump map through them. This will create moving shadows that make the leaves appear to move. A fractal displacement also can be used to move the leaves as well. Use a Texture Size of 0.1 meters and a Texture Velocity of 0.01 meters for a nice gentle breeze effect.

By saving this as a scene, you can easily use the Load From Scene button to bring this tree into any other scene and keep all the clipping and displacement information intact. This will make it easy to quickly landscape that park. At least until the client considers a nice big Douglas fir.

Dave Jerrard is director of computer graphics and animation at D'Visions Studios in London, Ontario.



Figure 17. Three images of the same tree rendered with different Polygon Size settings. From top, a setting of 10%, 100%, and 150%.



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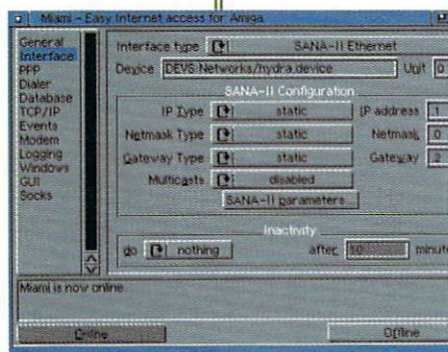
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BY JON CARROLL

Networking your
Amiga and PC for
better performance.

Getting Wired Networking Your Amiga with Your PC

One of the most difficult tasks for the modern Amiga LightWave 3D user is platform migration. Because Amiga LightWave isn't being updated to support the newer Amiga processors (like the 68060 and PowerPC CPUs), the only way to increase LightWave rendering speed is to migrate to another platform. The platform of choice seems to be Intel machines running Windows 95 or Windows NT 4.0. Since there is still plenty of useful Amiga hardware and software, many users need to be able to access data on Windows machines from their Amiga, whether to batch-process a large number of animation frames using Image-FX, or to transfer clips to their Flyer rendered on a faster system.



Miami is a shareware TCP/IP program. The unregistered version will run for only an hour at a time.

Usually, this process involves moving the frames on many floppy disks or over a null-modem cable. While this process works, it is trying and time-consuming. There is an easier way...networking. In this tutorial you'll learn how to network your Amiga with your PC.

You will be setting up a TCP/IP network. This means you need to acquire a piece of third-party software for your Amiga. The three most popular TCP/IP packages on the Amiga are AmiTCP, Miami, and Inet225. All three are suitable, but create a range of features, prices, and complexity. Also, you will need an Ethernet card for your Amiga and for your

PC. Amiga Ethernet cards are hard to find, and expensive. You might think about getting one used if you're really low on cash.

We'll be going through the procedure for setting up what I call a "poor man's network," using the Miami TCP/IP software and a freeware utility called FTPMount. Miami is shareware, and the unregistered version will run for one hour at a time. Miami costs \$35 and the program includes a utility to help you register the software. The unregistered version of Miami can be found on Aminet at www.usa.aminet.org/pub/aminet/comm/tcp/Miami30.main.lha.

FTPMount is an FTP client that hides its true nature by mounting itself as a device under Amiga-DOS. The "file drawers" in FTPMount give commands to the client to access remote FTP sites,

which the Amiga then sees as sub-directories. FTPMount can be found on Aminet at www.usa.aminet.org/pub/aminet/comm/tcp/FTPMount-1.0.lha.

Using this networking method requires that you also acquire an FTP server for your Windows system. I use a freeware server called War-FTP Daemon, available at www.the-core.net/mirror/jgaa/tftpd.htm.

1. Install your network card into your PC and add its drivers according to the instructions with the card.
2. Install your network card into your Amiga and copy its drivers to your DEVs:Networks/ directory.
3. Install your network protocols on the PC by going into Control Panel/Network and

choosing the Protocols Tab. If you are only networking these two systems, install the TCP/IP drivers *only*, because that is all you will need.

("Add" the protocol.) If your PC is networked to other systems already, more than likely other network protocols will already be installed. If the TCP/IP protocol is not installed, you will need to install it. Make sure that you have TCP/IP set to run over your Ethernet connection.

4. Install War-FTP on your PC.

5. Install Miami on your Amiga.

6. Run the MiamiInitSana2 program in the Miami directory.

7. When Miami asks for the name and unit number of your SANA-II device, direct it to the Ethernet device driver in DEVS:Networks/. The name of this driver will vary according to the Ethernet card you have purchased. If you have a Hydra or Amiganet card, the driver will be called hydra.device. If it is Commodore's A2065 Ethernet card, the driver will be called a2065.device. If you have a Village Tronic Ariadne card, the driver will be called ariadne.device. The "unit number" will be 0 (zero).

8. Miami will try to find out if its IP will be served to it. If you are not using a RARP or BootP server (you will know if you are), it will attempt to autodetect these. Wait for it to finish, then manually input the IP address for your Amiga. This will be determined by the IP addresses of the other systems on your

network. If only these two systems are networked, then use any address you find easy to remember. IP addresses use the format ###.###.###.###, where each ### is a number between 0 and 256. For this example, we will use 100.0.0.1.

9. Next, Miami will scan for its subnet mask. More than likely it will not be able to determine this automatically, so just allow it to perform the detection and then choose the default (255.0.0.0).

10. Next, Miami will ask for your "default gateway." Input the IP address of your PC. Still following the example, if you don't have one assigned yet, use 100.0.0.2.

11. Miami will announce that its configuration has finished. It will save the configuration so that the main Miami executable can read it.

12. Switch over to your PC so you can set its TCP/IP configuration. If you have an existing TCP/IP network, you may already have this information. If you don't, set the following options under "DNS" Select "Disable DNS." Set the IP address to 100.0.0.2. Set the subnet mask to 255.0.0.0. Click OK, and allow the PC to reboot. While it's rebooting, we'll finish configuring the Amiga.

13. Install FTPMount on your Amiga, following its instructions. It is important that you NOT reboot your Amiga after this installation. You still need to do a few things. In FTPMountdir/hosts, create a drawer labeled with the

name of your PC. Select the drawer, go to the Icons menu, and select Information. Add the following arguments to the icon:

- Host=100.0.0.2 (or whatever the IP address of your PC is);
- Login=xxxxxx (your network login for your PC);
- Password=xxxxxx (your password for your PC).

14. Switch over to your PC and run War-FTP. Go to the Properties menu and select Security/Edit User. Create a new user with the login and password identical to the one you just used on the FTPMount folder. Set the access permissions however you like. Note that it is possible, if you set the configuration correctly, to be able to access shared drives from other systems to the PC that you are using. Once you set this, click on Start Service.

15. Run Miami, and tell it to import the configuration data it saved earlier. Click on Events and change the event under Start to a Shell event. This will issue a Shell command upon startup of Miami. In the requestor, type "Mount FTP," activate the auto-online checkbox, and save your Miami setting using the Save command under the Settings menu. Reboot your Amiga.

16. When your Amiga has finished rebooting, run Miami. You can now access all of your PC drives on your Amiga!

Note that this method, while relatively easy and cheap to set up, does not allow you to access your Amiga's hard drives from your PC. But, it means that all of

Sneakernet: Moving Files the Hard Way

Many Amiga and PC users have removable storage like SyQuest, Zip, or Jaz drives available to them. Well, if you have similar drives on both systems, then you have a easy way to move large files between the two systems!

Most Amigas already come with a limited version of CrossDOS, a utility that allows you to read PC-formatted disks on the Amiga. The full version adds support for hard drives and removable media, and the current version (CrossDOS Gold 7.0) even supports Windows95/NT long filenames.

After installing the full version of CrossDOS, place a PC-formatted piece of your selected removable media into the drive. Open an Amiga command line and type ConfigDisk MSDOS and then select the proper partitioning and size format for your appropriate removable media. Voila—no more moving files at 720k!

your Amiga programs (including your Toaster/Flyer software) can access your PC by going to FTP: <name of the PC drawer> on your Amiga. For instance, you could render an animation sequence in LightWave on your PC as a Flyer clip, then copy the entire clip to your Flyer hard drive for editing. You could also batch-process animation frames using an Amiga image-processing program (like ImageFX) with the frames actually residing on your PC, or access CD-ROMs on your PC from your Amiga. Enjoy!

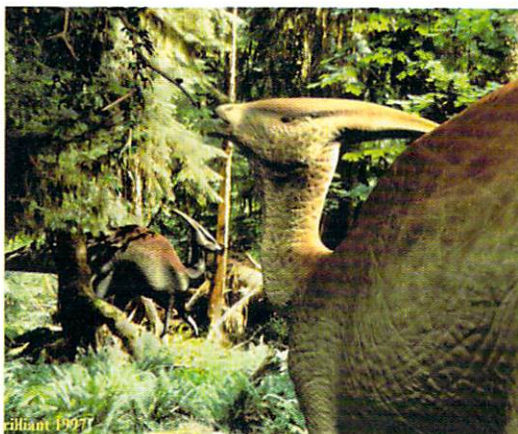
Jon Carroll is a freelance writer and animator living in Richmond, VA.

Renders

ARTWORK CONTRIBUTED BY OUR READERS

Ken Brilliant — "In the Meadow"

Software: LightWave 3D 5.0, Fractal Design Detailer
Description: I broke down and had to do a dinosaur.
email: kBrilliant@aol.com



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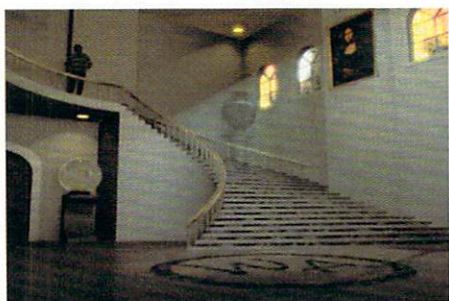
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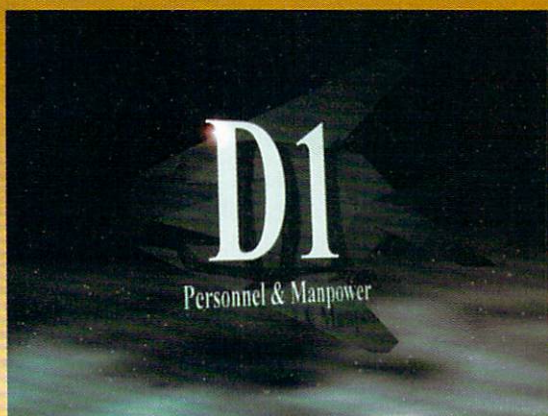
Martin Staubli — "Hold Up"

Software: LightWave 3D 4.0
Description: The idea behind the image was to create a comic-styled scene with a funny character.
email: akron@bluewin.ch
Phone: +41/56-634-2353



William Arias — "Mansion"

Software: LightWave 3D 5.0
Description: This is a photo-real animation that I'm starting to work on. I still need to texture it more, but it is starting to take shape.
email: william.kazumi@internetMCI.com



Roger Crouse — "Stealth"

Software: LightWave 3D 5.5
Description: I flipped the town sky (included with LightWave 3D 5.5), then scaled down to simulate the curvature of the atmosphere's edge. I also used the random stars object (included with LightWave 5.5).
email: crouse1r@ncr.disa.mil
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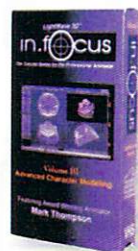
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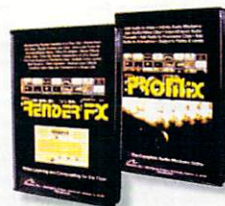
Flyer Flight Notes—Volume I: Flyer Flight Notes is the tutorial series for the Flyer professional. Insert edits, edit to crouton, using locks properly, audio editing techniques, and short stroking drives are all covered in this tape. Learn HD tools and many keyboard shortcuts that will make your Flyer editing sessions fly. Included with the video is Don's Cheat Sheet, a handy quick reference card with his favorite shortcuts. HD Tools • Audio Edits • AREXX Utilities • Video Inserts • Key Pages • ToasterPaint Processing • Music Videos • Third Party Products • Handling Effects and more...

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- Therefore, the potential focal range of the XL-1 is 35mm camera equivalents - from extreme wide to super telephoto - is 24mm to 17.280mm (EF 1200mm lens and Extender EF 2X)
- The 16:1 zoom has a focal length range of 5.5 to 88mm (35mm equivalent of 39 to 633mm). It has high speed motors for auto-focus and zoom, a six blade iris and a 1.5X ND filter. Externally the lens provides a variable speed zoom, manual zoom and manual focus control options and a one-push auto-focus button
- 16:1 also incorporates SuperRange Optical Image Stabilization. Besides a gyro sensor to detect camera vibration, it uses a motion vector to examine the image after it is received by the CCD to detect any shake missed by the gyro. This data is fed back to refine the movement of the variable-angle prism - resulting in the most advanced stabilization system available today

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- The 16:1 zoom has a focal length range of 5.5 to 88mm (35mm equivalent of 39 to 633mm). It has high speed motors for auto-focus and zoom, a six blade iris and a 1.5X ND filter. Externally the lens provides a variable speed zoom, manual zoom and manual focus control options and a one-push auto-focus button
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Three Recording Modes:

- Three recording options: Capture of high resolution full motion video (Normal Movie Mode), high resolution stop action images of moving subjects (Frame Movie Mode) and perfect stills (Digital Photo Mode). Frame Movie Mode continuously records 30 frames a second and effectively eliminates motion flicker by capturing a full image with every scan. Record high speed action for the purpose of extracting high resolution frame video images which can then be displayed, printed or digitized
- For SLR-style flash photography, the Digital Photo mode can accommodate the Canon 380EX E-TTL Speedlite using the optional FA-100 flash adapter

Unique Design & Dual Action Carrying Handle

- A unique shoulder mount design and carrying handle can accommodate a variety of shooting positions. In addition to the normal side grip the handle includes an additional start/stop switch and zoom control for dual-action shooting. Also ideal for low-angle recording. The adjustable shoulder brace enhances the shoulder mount design, serving multiple users and ensuring maximum comfort

Additional Features:

- Extra large 180,000-pixel color viewfinder allows you to shoot with the left or right eye and move from close range to short distance (sports finder) at the flick of a switch
- Zebra pattern and color bar generator to prevent over exposure and ensure accurate color display during monitor set-up
- Automatic and manual white balance, gain (five preset levels from -3 to +12dB) and exposure lock
- Records DV time code for as well as data code - date, time, shutter speed and exposure settings. The information remains hidden until selected for display
- Composite, S-Video & DV (IEEE 1394) output, Control L terminal
- Slow speed shutter: 1/8, 1/15 and 1/30 of a second
- LP Mode extends recording time of tape by 1.5 times
- Digital fader and wide screen TV effect
- Headphone jack with level adjustment
- Remote control with jog/shuttle dial

Panasonic Broadcast & Television Systems

AG-DP800H SUPERCAM



S-VHS 3-CCD Digital Signal Processing Camcorder

- Three high-density 380,000 pixel CCDs with half-pitch pixel offset achieves 750 lines of horizontal resolution, S/N ratio of 60dB and sensitivity of 18 at 2000 lux. Additionally the Frame Interline Transfer (FIT) CCDs minimize vertical smear even in very bright illumination
- Digital Signal Processing circuitry provides four valuable benefits
 - 1) Consistently reliable up-to-spec performance
 - 2) Fine adjustment of a wide range of parameters
 - 3) Memory storage and instant recall of specific settings
 - 4) More flexible and higher quality image processing, easier maintenance
- Two Hi-Fi stereo audio channels with a dynamic range of 80 dB, as well as two linear audio channels with Dolby NR
- Has a 26-pin connector for convenient backup recordings using an additional VCR equipped with a 26 or 14-pin connector
- Phantom power can be supplied to an optional mic. Power can be switched off to prevent battery drain when not in use

DP-800H "LS" Package:

- DP-800H Supercam 3-CCD camera head with 1.5" electronic viewfinder and Anton Bauer Gold Mount battery plate
- Fujinon S14x7.5 BRM 14:1 servo zoom lens
- CC-8800 soft carrying case
- WV-Q7700 tripod mounting plate

DP-800H "XL" Package:

- DP-800H Supercam 3-CCD camera head w/1.5" electronic viewfinder and Anton Bauer Gold Mount battery plate
- Fujinon S14x7.5 BRM 14:1 servo zoom lens
- CC-8800 Thermodyne hard shell carrying case
- WV-Q7700 tripod mounting plate
- Two Anton Bauer Digital Trimpack 14 batteries
- Anton Bauer 2-position quick charger

AG-EZ1 3-CCD Digital Videocassette Camcorder

- Three CCDs with 270,000 pixels each are horizontally staggered for optimum resolution
- Digital recording system delivers incredible 500 lines of horizontal resolution and virtually no noise. The signal-to-noise ratio is 54dB, an improvement of 6-9 dB over conventional analog systems. This actually represents a S/N ratio 2-3 times better than existing camcorders
- Audio is also recorded digitally using PCM (Pulse Code Modulation) for quality that rivals CDs. You can choose between two-channel 16-bit recording or two sets of 12-bit stereo, with the second set reserved for such as narration
- Includes a huge 1.5" 180,000 pixel color viewfinder. The viewfinder also lists 120 degrees vertically for shooting subjects from high or low angles. & its professional size means you don't have to press it against your eye to see the picture
- Built-in Digital Electronic Image Stabilizer (DEIS) compensates for jittery video and is particularly effective when the digital zoom is employed
- Equipped with 10:1 power and 20:1 digital zoom lens. Both zooms are adjustable in four speeds (3.5 seconds—15 seconds) based on how hard or soft the zoom toggle is pressed. To set up a shot quickly, a Turbo Zoom function moves from tight to wide angle, or vice versa, in under two seconds. For extreme close-ups the lens can focus up to 1/4 inch from the subject

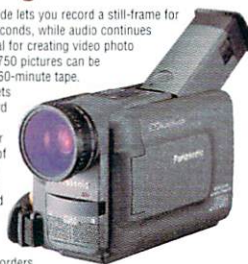


- Digital Photo-Shot lets you record a still-frame for about six seconds, while audio continues as normal. This feature is great for creating video photo albums or insurance tapes, as 290 still pictures can be recorded on a single 30-minute tape and 580 shots on a 60-minute tape. Using the TopScan feature any shot can be found easily

AG-EZ20 DV Palmcorder With IEEE1394 Digital Interface

- Equipped with the IEEE1394 interface, the AG-EZ20 can be connected to similarly-equipped DV camcorders and VCRs, so dubbed recordings will be clones of the original. Unlike analog dubs which suffer signal loss from one generation to the next, every copy is genuine
- Digital interface can also be used to export digital recordings to your computer where they can be edited, manipulated and used on web sites. (External codec interface and third-party software required)
- Like conventional camcorders it can record in both SP and LP modes for up to 1.5 hours of recording on a 60-minute tape. However, there is no degradation in picture or audio quality in LP mode. SP is provided for compatibility with Panasonic's DVC Pro camcorders and VCRs
- Includes 180,000 pixel color viewfinder for remarkably clear viewing
- Digital Electronic Image Stabilizer prevents jittery video, even when your hand is shaking
- Digital effects include audio and video fade, wipe, mix, strobe, solarization and trail, which adds a tail behind moving objects. Also has sepia tone for an antique look and negative/positive so film negatives can be converted in-camera to viewable pictures
- Variable speed 10:1 power zoom lens, plus 100:1 digital zoom. Lens can focus up to 1/4-inch from the subject
- Full manual control of focus, gain, white balance, shutter speed and backlighting

- Photo Shot mode lets you record a still-frame for about seven seconds, while audio continues as normal. Ideal for creating video photo albums, up to 750 pictures can be recorded on a 60-minute tape. Index Search lets you fast forward to the start of each picture, or the beginning of each recorded scene, so you can quickly find a desired scene
- Unlike some other DV camcorders which have vertical designs and are hard to handle for extended periods, the AG-EZ20 is a Palmcorder that is compact and comfortable to hold
- Incorporates a 3.8-inch color LCD monitor (131% more screen area than a 2.5-inch display) to bring freedom and convenience to video making. The monitor rotates 270° vertically and 180° horizontally, so you can monitor your shots - no matter the angle. The exceptionally bright monitor also has a built-in speaker so you can record the audio



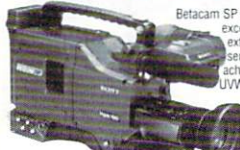
AG-1980 S-VHS Hi-Fi Editing VCR

- Incorporates advanced digital signal processing and digital noise reduction circuitry to deliver such high picture quality—that it's third-generation picture looks almost as good as first-generation offerings from other VCRs in it's class. In addition, the AG-1980 also features a full field digital TBC, insert and assemble editing, Hi-Fi stereo, quick response mechanism and a remote editing terminal
- Still the only VCR in it's class to provide near frame accurate editing. When used with edit controllers from Visions, FAST and FutureVideo, the AG-1980 achieves an accuracy of ± 2 frames And, the 5-pin edit terminal on the rear panel makes it very easy to set up an editing system
- Performs all assemble and video insert edits as well as audio video dubbing. Also has independent linear audio input and output for more flexible audio dubbing
- Hi-Fi stereo audio with a frequency response of 20Hz to 20kHz and a dynamic range of 90dB. It also has Hi-Fi recording level control, headphone monitor terminal with volume control and a mic input terminal
- Advanced dual-loading mechanism features a quick response time, requiring only 0.5 seconds for a picture to appear from Stop mode and 1.9 seconds from FF/REW



- Digital Comb Filter using advanced 3-dimensional system provides complete Y/C (luminance/chrominance) separation. This practically eliminates color and luminance blurring
- Field coefficient Digital Noise Reduction (DNR) circuitry processes the Y and C signals separately, thereby boosting the signal-to-noise ratio and reducing noise during playback
- Has a built-in full field TBC (Time Base Corrector) that eliminates even the smallest of jitter, skew, head impact error and color blurring. Invaluable for editing, the TBC helps maintain high picture quality even through the third-generation
- Besides it's digital circuitry, the AG-1980 also features laminated video heads. Clearly superior to heads of conventional ferrite they provide richer, more vibrant color reproduction and a higher signal-to-noise ratio

SONY UWV-100B 3-CCD Betacam SP Camcorder



Betacam SP one-piece camcorders are still the mainstay of field acquisition—and the UWV-100B is no exception. An enhanced version of the best-selling UWV-100, the new UWV-100B further extends performance and functionality. Equipped with Sony's state-of-the-art Power HAD CCD sensors, the camera virtually eliminates vertical smear (1/10 that of the UWV-100) and achieves much higher sensitivity, F11 at 2000 lux. And while more affordable than ever, the UWV-100B also offers 700 lines of resolution, 60dB S/N ratio, 26-pin VTR interface, compact design and ease of operation—making it ideal for field shooting applications.

Power HAD CCD Sensor

- Three 1/2-inch IT (Interline) CCD sensors with 380,000 pixels attain incredible sensitivity of F11 at 2000 lux (low light is 4 lux at 11.4, +18dB), S/N ratio of 60dB and 700 lines of resolution. Improved the structure of the IT CCD pixels also drastically reduces vertical smear so you have more freedom when shooting a high-light subject

Selectable Master Gain

- Under poor lighting, you can adjust the output level with the master gain selector to obtain brighter pictures. Gain-up value can be preset in 1dB steps from 1dB to 18dB

Intelligent Auto Iris

- When a subject is framed in a backlit situation or very bright lighting against a dark background, the subject is shown rather dark or too bright using the conventional auto iris. Intelligent Auto Iris detects the lighting conditions and adjusts the lens iris for the proper exposure

Total Level Control System

- Even if the incoming light exceeds the limit of the automatic iris control, the UWV-100B offers proper picture brightness by using the iris control in combination with AGC, Auto Exposure and Intelligent Auto Iris functions

Clear Scan

- Clear Scan records computer monitors without horizontal bands across the screen. Shutter speed in 183 steps within a range of 60.4 to 200.3 Hz can be set to match the monitors scanning frequency. Also has a variable high speed shutter from 1/100 to 1/2000 of a second

Built-in Time Code Generator

- SMPTE longitudinal (LTC) time code and User-bit generator and reader. Functions such as Rec Run/Free Run, Preset/Regen are easily set. For multi-camera operation, time code genlock to an external time code is provided

Audio System

- Recording inputs to the two longitudinal audio tracks are via XLR connectors, (with supplied on-camera mic or through rear inputs). Recording level for each track is adjustable and noise reduction can be switched in

Genlockable

- Genlock input for synchronizing with other professional cameras. Also has a built-in color bar generator

26-pin VTR Interface

- With the 26-pin VTR interface the UWV-100B can feed component, composite and S-Video signals to another VTR for simultaneous recording. Functions such as start/stop, are controlled through the 26-pin interface. External VTR status, such as Rec, Tally and Alarm will be shown in the viewfinder

DXF-601 Viewfinder

- Made of diecast aluminum, the ergonomic 1.5-inch DXF-601 viewfinder is rugged and durable yet ensures comfortable and easy operation while providing a remarkable 600 lines of resolution. Large diameter eye cup reduces eye strain and simplifies focusing. Diopter adjustments (-3 to 0) compensates for differences in eye sight

Optional VA-300 Playback Adapter

- Full color picture playback is available in the field by connecting the optional VA-300 playback adapter to the 20-pin interface of the UWV-100B. The VA-300 provides composite output and VHF signal output (with the optional RF Unit RFU-89A) for reviewing the recorded pictures on the monitor. The VA-300 is also equipped with two audio channels

LCD Multiple Display

- An 8-digit LCD display indicates time data, warning indications and video status. Battery status and two-channel audio level are also shown in a bar graph meter and in the record mode, remaining tape quantity is shown

Interactive With Anton/Bauer

- With Anton/Bauer Digital Batteries the amount of remaining battery power is accurately displayed on the LCD panel and through the viewfinder. Using Anton/Bauer's UL-2 Ultralight lighting power is turned on and off according to the VTR Start/Stop function

Compact, Lightweight and Well Balanced

- Weighs 6.9 kg (15lb 3oz) with the viewfinder, battery, cassette and lens. It is well balanced, with a low center of gravity. Shoulder pad is adjustable, so you maintain optimum balance when using different lenses and batteries

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SONY

DSR-200 3-CCD Digital (DVCAM) Camcorder

Incorporating DVCAM technology, (digital component recording system) luminance at 13.5 MHz same as D-1) the DSR-200 records an incredible 500 lines of horizontal resolution at 5.5MHz. To complement the video, the DSR-200 also records audio digitally (48kHz or 32kHz), using PCM (Pulse Code Modulation), the same technology used in CDs for a breathtaking dynamic range of 96 dB. And since video and audio signals are recorded digitally, you can copy or edit multiple generations with no loss in picture quality.

3-CCD Camera System
Three CCDs, each with 410,000 active pixels deliver incredible color fidelity and dramatically improved S/N ratio. Also offers superb sensitivity of only 4 lux minimum illumination.

10X Optical/20X Digital Zoom
Variable servo 10X optical power zoom lens goes from 5.9 to 59mm in 1.7 to 24 seconds. The manual zoom rocker is continuously variable right up to where the digital 20X zoom kicks in.

Super SteadyShot
Using a proprietary motion sensing system, Sony's Super SteadyShot reduces high frequency camera shake without compromising image quality. SteadyShot uses horizontal and vertical motion sensors that allow it to work accurately while zooming, moving (even shooting from a car), and shooting in low light conditions.

Digital Effects
• Effects include audio and video fade, Overlap and Slow Shutter. In overlap mode, the last frame of the preceding scene dissolves to the action being recorded. In slow shutter it is possible to record in very low levels of light, albeit with MTV strobe-like effect.
• Time-lapse record capability is selectable from 0.2 to 2 seconds in intervals from 30 seconds to 10 minutes.
• Frame recording mode lets you record with a stop-motion animated effect. You move the subject a little and the camera can record six frames before going into standby mode.

Exposure Control
• Automatic and manual focus, iris, shutter, gain and white balance. Iris is adjustable in 12 levels from F1.6 to F11, shutter from 1/4 to 1/10,000 of a second in 12 steps. Gain from -3dB to +18dB in 8 steps.
• Zebra Pattern indicator for adjusting shutter speed & exposure.
• Custom Preset function lets you preset, store and recall custom settings for color intensity, white balance (bluish or reddish), sharpness and brightness.

• Built-in ND filter cuts down the amount of light, letting you to work in the middle of the camcorder's f-stop range even under bright conditions.



Time/Data Codes
• Stores Photo, Date/Time, Shutter Speed, Iris, Gain and F-stop for easy recall. So if you have to reshoot, you know your original settings for every scene and frame.
• Records Drop/Non-Drop Frame time code. Time code can be read either as RC time code (Control L) with an accuracy of 5 frames, or as SMPTE time code with ±0 frames when used with RS-422 VCR's.

Professional Viewfinder
1-inch B&W viewfinder with 550 lines of resolution for easy focusing even in low contrast lighting situations. Also has a separate information sub panel for displaying time code, battery time, tape remaining and other camcorder functions without cluttering up the viewfinder.

Digital Audio
• Records 16-bit/48kHz audio on one stereo track or 12-bit/32kHz with two pairs of stereo tracks (L1/R1, L2/R2), so you can add stereo music or narration.
• One-point stereo electret condenser mic for clear stereo separation. Directivity can be selected from 0°, 90° and 120°. Audio DSP provides wind noise reduction without harsh filtering to maintain audio quality.
• XLR input connectors for mics and audio equipment.
• Automatic and manual (20-step) audio level control controls. Monitor audio with headphones or from the LCD panel which has an active VU meter.
• Since audio and video are recorded on separate areas of the tape, you can add audio tracks later and insert-edit video without affecting the original audio track.

DSR-200 Field Package:
• DSR-200 Camcorder • NPA-1000/B Battery Case Adapter
• 3 NP-F930/B 7.2v 4000 mAh Batteries
• AC-V900/B AC Adapter, Triple Battery Charger
• VCT-U14 Tripod Adapter • LC-2000CP System Case

DSR-PD1 Mini DVCAM Camcorder

The smallest, most advanced professional format camcorder available, the DSR-PD1 has a 680,000 pixel CCD chip specially designed for use with the DVCAM format to assure high resolution and digital, noise-free pictures. Incredibly lightweight, exceptionally sturdy and extremely portable, the PD-1 is perfect for tight situations where your regular, full-size camcorder is too large, heavy or difficult to maneuver. The camera also includes a 2-1/2-inch SwivelScreen LCD color viewfinder, Super SteadyShot picture stabilization and uses the latest in Lithium-ion battery technology so there's no "memory effect".

• DVCAM format with audio lock mode for accurate editing and high reliability.
• 10.1 (4-40mm) variable speed (1.0-42 seconds) optical zoom lens plus 120X digital zoom capability.
• 1/3" CCD with 680,000 pixels designed and developed for DVCAM digital picture quality.
• PCM stereo digital audio delivers CD like sound with 96dB range and wind noise reduction.
• SuperSteady Shot Picture Stabilization system uses motion sensors to compensate for unwanted hand jitter as well as high frequency shake such as vehicle vibration.
• 4 mode auto exposure for different recording situations: Auto, Sports, Sunset & Moon, and Landscape Mode.
• Built-in speaker with volume control for monitoring sound during playback.
• 2 1/2" SwivelScreen Color LCD with Advanced Color Viewfinder uses active matrix technology to provide clear accurate colors even in bright sunlight. You can flip the screen around and use the LCD monitor and color viewfinder simultaneously, providing an option no other digital camcorder can provide.
• LP recording mode allows 90-minute recording with a 60-minute Mini DVCAM tape.



• Lithium-ion Accupower battery system lets you know the amount of power remaining in your battery within one minute accuracy.
• Photo Mode for high quality still images. You can record up to 108,000 individual still image frames.
• Built-in fader (to black).
• Automatic and manual focus as well as selectable white balance (auto, indoor, outdoor, hold only).
• Digital video interface edits between 2 digital camcorders/VCRs with virtually no generation loss.
• Digital to digital transfer of audio/video information (IEEE 1394 compatible).
• Drop frame time code for frame accurate editing.
• Extended data allows Video Time/Speed/Gain/Iris.
• Control L (LANC) interface connects to Sony VCRs and editing controllers for accurate editing. (Requires optional VMC-LM7 LANC/Microphone adapter).

DSR-30 DVCAM Digital VCR

The DSR-30 is Sony's first industrial grade DVCAM VCR. Industry standard 4:1 1.8-bit digital component recording with a 5:1 compression ratio, provides spectacular picture quality and multi-generation performance. This feature packed VCR handles both Mini and Standard DVCAM cassettes for up to 184 minutes of recording time, as well as playback of consumer DV tapes. PCM Digital Audio is recorded at 48kHz (DAT quality) stereo.

Dual Cassette Mechanism
Dual Cassette mechanism allows use of both standard DVCAM and mini size tapes without an adapter.

Digital Audio
PCM (Pulse Code Modulated) Digital audio can be recorded at either 48kHz (16-bit 2 channel) for DAT quality audio, or at 32kHz (12-bit 2 channel) when an additional two tracks of audio can be added over previously recorded portions.

Editing Capabilities
Equipped with Control L, the DSR-30, when hooked up to another LANC-based recorder, is capable of SMPTE Time Code based accurate editing even without an edit controller. Built in editing functions include separate video and audio insert. Or assemble like editing with up to ten scenes automatically assembled in any order chosen by the 'In' and 'Out' points. By searching for either an Index point or Photo Data points by the DSR-200 camcorder, the DSR-30 can drastically cut the time usually required for editing. The DSR-30 can record up to 135 Index points on the Cassette Memory thanks to its 16k bits capability.

Audio Lock
Audio lock ensures audio is fully synchronized with the video for absolute precision when doing an insert edit.



IEEE 1394 Interface
DV In/Out (IEEE 1394) connector on the VCR allows digital dubbing of video, audio and data with another VCR having this connector, with no loss in quality.
Clear Frame Picture
Using Frame Interpolation technology the DSR-30 can detect motion between two fields within a frame and compensate for picture blur providing a clear frame picture even from moving images.
Built-in control tray has a jog/shuttle dial, VCR and edit function buttons. The jog/shuttle dial allows picture search at ±15 to 15X normal speed and controls not only the DSR-30 but also a player hooked up through its LANC interface.
Backward and Forward Compatible
Analog audio and video input/outputs make it fully compatible with non-digital equipment. Playback compatibility with consumer DV tapes allows you to work with footage recorded on consumer-grade equipment. Tapes recorded in the DSR-30 are also compatible with Sony's high-end DVCAM VCR's.



SONY

SVO-2000 S-VHS Hi-Fi Editing VCR

The SVO-2000 is a powerful, yet easy-to-use S-VHS Hi-Fi editing recorder. Two SVO-2000's combined with the optional RM-250 Edit Controller form a cost-efficient cuts-only editing system - with assemble, video insert, audio dub and program editing.

Superb Video and Audio Performance
• S-VHS format delivers 400 lines of horizontal resolution and consistent, clear image reproduction for superior editing results.
• Adaptive Picture Control (APC) for optimum picture. In record mode, APC automatically tests an inserted tape and checks the condition of the video heads. It then adjusts the recording circuitry to capture clear and crisp images. In playback, APC automatically sets the ideal balance of picture sharpness and clarity.
• Hi-Fi stereo recording system has a wide frequency response of 20Hz to 20kHz and a superb 90dB dynamic range, and individual recording level controls for the left and right channels.



Editing Features:
• The SVO-2000 has a Control-Edit 5-pin remote terminal that allows it to be controlled externally. Connects directly to the optional RM-250 for easy setup.
• Control-S input and output terminals allow two SVO-2000s to be connected for synchro editing-without the RM-250.
• RM-250 also offers program editing capability, which allows automatic sequential editing of up to 20 pre-assigned scenes.

SVO-2100 S-VHS Editing Recorder

Excellent Audio and Video
• S-VHS format provides excellent picture quality and consistent, clear image reproduction for superior editing results.
• For-channel audio recording. Two-channel Hi-Fi stereo with a superb 90dB dynamic range and a wide frequency response of 20Hz to 20kHz. Plus two additional longitudinal (normal) audio tracks. By using the AUDIO MONITOR selector, longitudinal audio or Hi-Fi audio can be monitored.
• Auto head cleaner removes tape dust preventing head clogging and deterioration of picture quality.
• Continuous auto repeat playback function.

Playback and Recording Functions
• By connecting multiple SVO-2100's via the VIDEO IN connector or THROUGH connector, they can simultaneously record the same program.
• When the Power On Recording or Power On Playback is set, it automatically starts recording or playing back a program the moment the power is supplied from externally connected equipment. This allows unattended automatic VTR operation.

Accurate Editing and Remote Control
• Optional SVBK-10 (RS-232C Interface Board with LTC time code reader and generator) allows the SVO-2100 to communicate with external edit systems such as computers or Sony's FXE-100/120 editing system.



• When used with a computer, the system can be used to create computer graphics, thanks to the SVBK-10 supporting commands for Number Frame Record and Auto Edit.
• When used with the FXE-100/120, you have a cost effective frame-accurate (LTC timecode) editing system with full Assemble, Insert, Audio Split, A-roll, and A/B-roll editing.
• The SVO-2100 can be operated with an optional foot switch. Recording can be started or stopped from the external foot switch connected to the Foot SW jack of the SVO-2100. During recording, the Rec Tally signal can be output from the Foot SW jack. The Rec Tally signal is useful when used with a monitor with Tally IN capability.
• Optional SVRM 100A or RM-V200 Remote Control Unit allows remote control of the SVO-2100's basic functions.



JVC PROFESSIONAL

SR-S365U S-VHS Recorder With RS-232 Control

With high-resolution S-VHS, jog/shuttle search and built-in RS-232C interface, the SR-S365U is the foundation of an affordable pre-editing system. Convenient functions such as insert/assemble editing and Random Assemble Editing let you produce edited programs right away. And since the SR-S365U is designed for use with the professional RM-G800U Edit Controller, putting together a high-performance editing system with all the benefits of precision CTL time code editing has never been easier.

• S-VHS picture quality with 400 lines of horizontal resolution plus noise reduction circuitry keeps pictures clear and sharp.
• With just the RM-G800U and a pair of SR-S365U's, you have the most economical and productive time code editing system available. Edit video independently of the audio, adding new audio later if desired. For faster, more flexible editing, build a mixed system, using the powerful BR-S800U VCR. Either way, you'll get the benefits of CTL time code.
• Two channels of Hi-Fi for dynamic, high-quality stereo sound and an editable monaural (normal) channel. A new self-dubbing function allows you to copy the existing Hi-Fi track onto the normal audio track.



• Built-in time code generator/reader utilizing JVC's CTL Time Code System records time code data on the control track for fast and accurate access to any frame. Far superior to conventional control track counters that lose reference when the tape is removed from the machine. CTL Time Code can also be post-processed without sacrificing the audio track.
• Built-in RS-232C interface so you can connect it directly to a PC. Compatible with the many RS-232C-based editing controllers available today.
Other Features
• Flying erase head • Hi-Fi audio recording level controls & indicators
• Headphone connector with volume control
• Automatic head cleaner • Digital hour meter indication

VES-58 EDIT-DESK S-VHS Editing System

BR-S500U Edit Player • BR-S800U Edit Recorder • RM-G800U Edit Controller

Fast, accurate and professional editing is affordable. Linked via JVC's proprietary control bus, these three units offer all of the editing features professionals have come to expect. The VCRs feature a fast, heavy-duty tape drive and the built-in CTL (Control Track) time code provides unparalleled accuracy and flexibility. Best of all, the VCRs feature an open architecture for easy system upgradeability.

SUPERB VIDEO PERFORMANCE
Picture improvement technologies like digital Y/C separation, chroma noise reducer, chroma aperture correction and a 3-line cross-talk cancellation all combine to offer outstanding image quality, even when dubbing down multiple generations.

CONTROL TRACK TIME CODE SYSTEM
JVC's CTL (Control Track) Time Code System records absolute tape address information (hrs: min: sec: frames) on the control track, for fast and accurate access to any frame on the tape - far superior to control track counters that lose reference when the tape is removed. CTL Time Code can also be "post-processed" during recording.

FOUR-TRACK AUDIO
Two Hi-Fi stereo channels with a wide frequency response and dynamic range of 80 dB and two linear tracks. The BR-S800U's linear tracks can be dubbed independent of each other and of the video - ideal for adding background music or sound effects. There are 2 audio level meters, switchable between the Hi-Fi and linear channels. Separate input and output terminals are provided.

RM-G800U EDIT CONTROLLER
• Features automatic assemble and insert editing, audio insert editing, as well as preview/review for checking edits before and after editing, and go to for direct access to any edit point. A capstan bump function is provided to assure greater edit consistency.
• Has two GPIs allowing automatic triggering of special effects generators, switchers or audio mixers.
• 8-digit LED counter indicates all edit data in either the TC or CTL mode. Switchable between player and recorder.
• Precise and responsive jog wheel makes it easy to locate any frame and can also be used to enter and trim edit points



OPEN ARCHITECTURE
Two plug-in extension slots on the rear panels of both VCRs accept optional expansion boards. To build a PC-based edit system, add the SA-K27UA (RS-232C) board. To use with RS-422-based edit controllers, plug in the SA-K26U (RS-422) card. Other boards include the SA-N50U DNR board with time base stabilizer, and the SA-R50U VITC/LTC time code generator/reader.

RM-G805U A/B ROLL EDIT CONTROLLER

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FAST DV Master

A professional DV editing system, the DV Master accepts data directly from digital (DV) camcorders and VCRs in real-time, eliminating the degradation of traditional analog and M-JPEG video editing as well as the limitations of other software-based DV editing systems. Through the DV Master's IEEE1394 interface you can transfer video and audio from your DV machine in real-time and store it on your hard drive for editing and post production processing. Now you can go directly from the camera to the computer and back without converting to analog providing the ultimate in digital video quality. DV Master lets you manipulate digital video with special effects and combine it with edited audio. The completed video can then be played directly from hard drive and transferred to videotape, CD-ROM, etc. Edit machine control can also be transmitted via the ultra-fast IEEE1394 transmission protocol.

Sony CoDec:

Unlike software-based DV systems that can be as slow as six times real-time for access to video data, DV Master incorporates the same hardware CoDec (DVBC-1) as used in Sony's DV camcorders and VCRs to guarantee lossless transmission at top speed. With just one cable you can transfer video, sound and machine control signals in real-time. Using the Sony CoDec also allows the board to display live video during "capture", as well as at any time during the editing process. You can scrub in or trim the timeline, and then preview it in real-time at full-screen, full-motion on your video or computer monitor.

Bundled Software: Includes full version of Adobe Premiere 4.2 and Sonic Foundry Sound Forge audio editing software.

IEEE1394 Interface:

Equipped with the IEEE1394 (FireWire) interface, DV Master delivers lossless transfer to and from DV camcorders and VCRs and maintains full DV quality throughout the entire post-production process right through to the master tape. To complement the video, DV Master provides digital stereo audio according to DV specifications (four 32-kHz or two 48 kHz channels). Also available is analog audio processing in WAV format with 16-bit (44.1 kHz) stereo. Hardware AV locking ensures the audio is always lip-synched with the video for perfect tape dubbing. DV Master can also convert analog composite and S-Video signals.

CTI DISK ARRAYS for PC & Macintosh

Video applications need extremely high data throughput to ensure high quality video. Using ATTO PCI Ultra SCSI accelerator cards and Seagate Ultra 16-bit disk drives, CTI disk arrays provide high data rates of up to 80 MB/sec to ensure smooth clean video without dropped frames. Especially designed for audio and video applications, Seagate disk drives employ embedded servo technology, eliminating the need for thermal recalibration. CTI disk arrays are fully tested for Windows NT and Power Macintosh systems and are available in fixed and removable configurations. With arrays from 8GB to 36GB and up to 18GB per day in daily chained, CTI delivers the flexibility, performance and reliability at a price you can afford.

- Plug and Play • Hot swappable cannister
- Multiple large power supplies • Efficient cooling and airflow
- ATTO RAID striping software for Windows NT or Macintosh

- 68-pin active terminators and 68-pin system cables
- Push button SCSI ID selector
- All arrays come with a five year limited warranty

2 Bay Tower Fixed

CTI-8FS 8.4GB Array with 2 Seagate Barracuda 4.2GB Ultra Wide drives (#ST34371W) and ATTO Single Channel SCSI card (18.2 MB/s sustained transfer rate).....**2072.95**

CTI-18FS 18.2GB Array with 2 Seagate Barracuda 9.1GB Ultra Wide drives (#ST19171) and ATTO Single Channel SCSI card (28.2 MB/s sustained transfer rate).....**2692.50**

2 Bay Tower Removable

CTI-8RS 8.4GB Array with 2 Seagate Barracuda 4.2GB Ultra Wide drives (#ST34371W) and ATTO Single Channel SCSI card (18.2 MB/s sustained transfer rate).....**2547.95**

CTI-18RS 18.2GB Array with 2 Seagate Barracuda 9.1GB Ultra Wide drives (#ST19171) and ATTO Single Channel SCSI card (28.2 MB/s sustained transfer rate).....**3167.50**

4 Bay Tower Removable

CTI-36RS 36.4 GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST19171) and ATTO Single Channel SCSI card (28.2 MB/s sustained transfer rate).....**6328.95**

CTI-36RD 36.4GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST19171) and ATTO Dual Channel SCSI card (39.9 MB/s sustained transfer rate).....**7013.95**

CTI-36R2S 36.4GB Array with 4 Seagate Barracuda 9.1GB Ultra Wide drives (#ST19171) and 2 ATTO Single Channel SCSI card (46.4 MB/s sustained transfer rate).....**7013.95**

miro DC-30 plus PCI Capture Card for Windows and Macintosh

The miroVIDEO DC30 is the ideal system for all of your video and audio production needs. A professional studio-quality nonlinear video and audio editing system, it lets you capture, edit, add special effects or titles to your video, mix CD-quality audio, and then output the final cut to video tape. The DC-30 also offers fast play and installation and easy to use software, so you'll be producing studio quality video in minutes. It even analyzes your system and automatically configures itself to provide the optimum video quality.

- The DC-30 is a PCI Bus mastering card that delivers a 6MB per second sustained video data transfer rate for the highest quality video capture in full frame and full field resolution. PCI Bus mastering ensures CPU bottlenecks don't impede the performance of the PCI bus, thereby limiting the reachable video transfer data rate. With other cards, video data rates above 4MB per second can cause a CPU generated interrupt and lead to dropped frames in the video capture process.
- 3:1 compression ratio (adjustable up to 32:1). A lower compression ratio means a better final video image quality. Compression ratios under 4:1 are considered to be "broadcast quality."
- CCIR 601 support provides broadcast compatible video in a 720 x 480 pixel (NTSC) and 720 x 576 (PAL) resolution. CCIR 601 support allows the S-Video output to be upgraded to Betacam with the assistance of a time base corrector.
- Real-time video overlay displays the video in real-time on the computer monitor during the capture and video editing process, eliminating the need for an external video monitor.
- Full input and output support for NTSC, PAL, SECAM, PAL M and PAL N for worldwide compatibility.

- Audio and video capture is synchronized by using the video clock to provide perfect lip-synchronization. Integrating the audio portion on one board also allows the audio capture to take advantage of the higher PCI data rates. (Capture is selectable from 8-bit mono 11kHz to 16-bit stereo 44.1kHz).
- Hardware acceleration of Adobe Premiere provides almost instant display of video "thumbnails" in the construction window (less than one second). Acceleration also reduces the time necessary to create "previews" and final video clip with "make movie" that results in improved productivity.
- Internal video and audio connections offer additional flexibility for connecting CD-ROM drives, TV Tuner boards, an additional sound board, and speakers.
- Includes Adobe Premiere 4.2 full version, Adobe Photoshop 3.05 LE, Adobe Acrobat Reader & Asymetrix 3D / FX animation software.

DC-30 plus for Windows\$799.00

Miro DC-30 plus Turnkey System:

- 220-watt midtower case • Pentium 200 MHz MMX processor • PCI motherboard with 512K cache
- Diamond Stealth 3D 2000 4MB DRAM PCI display card • 64MB of RAM • Quantum 2.1 GB IDE system drive
- Seagate (Barracuda) 4.2GB SCSI-2 FAST/ultra-wide hard drive • Adaptec AHA-2940UW FAST/ultra-wide SCSI-2 controller
- 3.5" floppy drive • Teac CD-524E 24X EIDE internal CD-ROM drive • Altec-Lansing ACS-43 2-piece speaker system
- Focus 2001A keyboard • Microsoft MS mouse • Viewsonic 15GS 15-inch 1280 X 1024 SVGA monitor
- Windows 95 • Miro DC-30 plus video/audio capture card
- Adobe Premiere 4.2 (full version) editing software, Adobe Photoshop 3.05 LE imaging software and
- Asymetrix 3-D / FX animation software.....**\$3695.00**

TRUEVISION/AVID TARGA 1000/MCXpress

Professional Video Production Workstation

Incorporating the award-winning TARGA 1000 digital video engine and Avid MCXpress NT non-linear editing software, this fully-configured video production workstation is designed to meet the needs of demanding video production professionals, corporate communicators, educators, training professionals and Internet authors. It includes full screen editing, unlimited compositing and unlimited layering of two video tracks, all from the easy-to-use and intuitive MCXpress NT interface. It also delivers pristine image quality, superior audio-video synchronization, support for NTSC and PAL video standards and composite or S-Video input/output.

TARGA 1000 Features:

- Designed for high performance PCs, the TARGA 1000 delivers incredible processing speed for video and audio effects, titling and compositing. With high-speed PCI interface it lets you capture, edit and playback full-motion, full-resolution digital video with fully synchronized CD-quality audio.
- Record/playback video directly to/from hard drive at full frame (50 fields/sec - PAL, 60 fields/sec - NTSC). Video is stored and played back at the highest resolution for each format (768 x 576 - PAL, 640 x 480 - NTSC). Compression can be adjusted on the fly to optimize for image quality and/or minimum storage space. Equipped with composite and S-Video inputs/outputs. Also available with component input/output (TARGA 1000 PRO).

- Genlock using separate sync input for working in professional video suites
- Audio is digitized at 44.1kHz or 48kHz sampling rates, for professional quality stereo sound. Since all audio and video processing is done by on-board DSPs, you are assured of perfectly synchronized sound and images.

MCXpress Features:

A powerful non-linear, on-line editing solution, MCXpress for Windows NT is the ideal tool for independent and corporate video and multimedia producers who require predictable project throughput and high-quality results when creating video tapes and digital media content for training, promotional/marketing material, local television and cable commercials, CD-ROM and Internet/intranet distribution. Based on Avid's industry-leading technology, it combines a robust editing functionality with a streamlined interface optimized for ease-of-use. It offers integration with third-party Windows applications, professional picture quality, professional editing features, powerful media management, a robust title tool and a plug-in effects architecture. It also features multiple output options including MPEG-1 and AVI so you save time and money by reusing media assets across a range of video and multimedia projects.

Input

- Delivers 200KB/frame images (3:1) compression using the TARGA 1000 board.
- Supports component, composite and S-Video providing high-quality 640 x 480 or 720 x 486 images - meeting CCIR-601 specifications. Before digitizing, you can turn video and audio on or off, adjust the incoming signal with the built-in waveform monitor and vectorscope, and adjust the levels of the incoming audio (up to 16-bit 44.1 kHz CD-quality). Dial-A-Quality feature lets you meet specific system, storage and delivery needs.

VCR Control

- Offers batch digitizing when used with time code and an RS-422-equipped VCR. Digitize and edit source material at low resolutions, saving valuable hard drive space, then when you're finished, batch digitize at the highest resolution only the material you need for the final version.

Editing Tools

- Display clips in Frame View for storyboarding or Text View, and quickly locate shots using search and sort utilities. Create programs interactively using timeline editing, frame-accurate trimming and full-screen playback. Unlimited compositing, 32 levels of undo/redo and extensive online support help keep you productive at all times.
- Timeline window (where you create and edit your project) displays two video tracks - the top track is for creating titles, alpha, chroma and luminance keys, transitions and layered effects. Transitions include smooth motion F/X as well as support for Hollywood FX and Boris FX plug-ins. The second track is for your video clips and four audio tracks (A1 to A4). The timeline viewer lets you view your project on the computer and video monitor simultaneously so you can watch the actual video output.

Digital Effects

- Over 100 transition effects
- Key effects including alpha, chroma, luma
- Ability to invert alpha channel • Picture-in-Picture
- Color effects including hue, brightness, saturation, blur, posterize, and invert. Smooth motion effects including slow, fast, freeze, freeze-frame, reverse, fit-to-fill.

Character Generator

- Embedded in the software is a subset of Image North's Inscrber CG titling software - the industry standard. Create rolling and crawling titles with any TrueType font or imported graphic. Control position, kerning, leading, transparency levels. Also has eight built-in templates

Audio

- Four audio tracks for real-time audio monitoring and mixing (with unlimited layering)
- Two channels of 44.1 kHz audio for I/O
- Real-time audio levels and pan
- Digital audio scrub
- Adjustable digitize gain
- Waveform display in timeline
- Single-track audio crossfades
- Volume controls for entire sequences as well as volume control of channel, track, clip or within clip

Import/Export

- Import and export a range of Windows-based file formats and seamlessly integrate 3D animation, graphics and audio from other sources. Import and export standard Windows file formats including WAV audio and FLC animation as well as over 20 graphics formats. Rapidly exchange full-screen, 24-bit color AVI images between applications on your system. Through OMF Interchange, you can import video and audio files from other OMF-compatible applications such as Avid's Media Composers system or MCXpress for Macintosh. Elastic Reality and Digidesign Pro Tools.
- When you're finished, print your program to tape in real time or export your project as an MPEG (bundled with Heru/Pulitzer MPEG encoder) or AVI file for use with any authoring or Internet publishing application.
- For EDL export, it comes with a separate application called MCXEDL that exports EDL formats (CMX, GVG, Sony) from an MCXpress sequence.

TARGA 1000/MCXpress Turnkey Systems:

- 300-watt, 6-Bay Full Tower ATX Chassis
- Pentium ATX Motherboard with 512K Cache
- Pentium II-300 MHz Processor
- Matrox Millennium II AGP 4MB WRAM Display Card
- 64MB 10ns 168-Pin (DIMM) S-DRAM
- Quantum Fireball 6.4GB IDE System Drive
- Seagate Barracuda External 9.1GB SCSI-3 Ultra Wide Capture Drive
- Adaptec AHA-2940UW Ultra Wide SCSI-3 Controller Card
- Teac CD-532E 32X EIDE Internal CD-ROM Drive • 3.5" Floppy Drive
- Altec-Lansing ACS-48 3-Piece Deluxe Speaker System
- Viewsonic 6771 17-inch (1280 x 1024) Monitor (0.27mm dot pitch)
- Focus 2001A Keyboard • Microsoft MS Mouse
- Windows NT 4.0 Operating System Software
- Avid MCXpress for Windows NT
- Truevision TARGA 1000 or 1000 Pro Video Capture Card

With TARGA 1000\$7495.00
With TARGA 1000 Pro (component input/output)\$7995.00





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AutoMedia AutoMasker

World's Only Automated Video-Object Masking Tool

AutoMasker is the world's only automated software tool for accurate isolation of items and figures in a video clip. Using intelligent algorithms that quickly mark the border of an object in a key frame, AutoMasker determines the exact border in subsequent frames even when the object is multi-colored, changing its geometry or moving over a colorful and dynamic background.

Using innovative break-through technology, AutoMasker enables automated masking, isolation, painting, extracting and insertion of selected objects into video streams at a fraction of the cost incurred using the conventional frame-by-frame painting method. Selected objects can be modified within AutoMasker or in combination with other digital video special effects or compositing software. AutoMasker is very flexible and works on just about any platform - SGI, Windows 95 and NT 4.0. It works with standard file formats including: TGA, BMP, QuickTime and AVI. The tools are powerful enough to work, accurately, even on fields for precise masking results.

- Greatly increases masking productivity
- Automates masking of video objects even when they are multi-colored, changing their geometry and moving over colorful and dynamic backgrounds.
- Easy object selection in first frame and exact boundary tracing in subsequent frames
- Easy modification to object border and controlled anti-aliasing
- Independent automatic object and background color effects



- Simultaneous masking of a number of objects and objects with holes
- Create mask or colored output movie, including optional alpha channel
- Compatible with most file formats including TGA, VDA, ICB, VST, AVI, FLI, PCS, DCK
- Results can be used with most third-party applications.

MESHPOINT 3D is a full-featured multi-platform 3D paint program that supports multiple 3D animation applications, including Studio MAX and 3D Studio Classic, LightWave 3D, Softimage, Electric Image, Strata Studio Pro and Cinema 4D.

With MeshPoint, animators can apply paint and textures to their 3D wireframes in real-time as if they were painting a real-world object with paint and a brush. MeshPoint comes with all the standard paint tools, like air brush, brush hose and clone tool, that one has come to expect in a 2D paint program, but allows them to be used in real-time in 3D. MeshPoint also lets you paint across multiple textures that have been assigned to a single 3D object. It supports multiple textures per object and the unique Tru-V allows 3D Studio Max users to paint at face level on an object without being restricted by traditional mapping methods.

Genesis Special Effects and Lens Flare Plug-in for 3D Studio MAX and Photoshop

GenesisTM is a revolutionary special effects plug-in that takes basic properties of physics and harnesses them for use in both still and animated rendering. GenesisTM can create lens flares, sparkles, glows, heat distortions, 3D particle clouds, gas clouds, explosions, and even flowers with complete animation control over every aspect of the effect. Additionally, GenesisTM eliminates the usual limitations of most comparable packages—point-light sources or complex object linking are no longer necessary. With GenesisTM you can link any number of objects of any type. The possibilities are limited only by your imagination! And this power has not been added at the expense of program complexity, indeed there are no lists of parameters with cryptic names and wherever possible real time previews are available to reflect the changes being made.

GenesisTM incorporates a staggering feature set with advanced rendering options such as full field rendering on all effects (even glows, sparkles), analytic anti-aliasing, full animation of all effects, fractal noise, a completely new object flare effect that makes separate glow/sparkle flare plug-ins a thing of the past, particle animation that sets a new standard, a wonderfully user-oriented interface with real time feedback at all possible occasions, FULL advantage of multi-processor systems (both in rendering effects and in user interface), unlimited layering capability, and blindingly fast performance. Full binary compatibility of files between the different versions (e.g. create and load GenesisTM effects interchangeably between 3D Studio MAX and Adobe Photoshop) and much, much more.

CrystalGraphics FLYING FONTS PRO 3.0 for Windows

The easiest and most affordable way to create professional still and animated 3D titles and logos for video and multimedia presentations.

- MODELING TOOLS:**
- Text tool loads any of the 12 included outline fonts or loads any Postscript Type 1 font.
 - Integrated polygon tool - lines, arcs & splines in 1 operation.
 - Imports Illustrator 88 "AI" and EPS files produced by Adobe Illustrator, CorelDRAW or other drawing packages.
 - Predefined levels for fast creation of complex designs. Also predefined grid snap for precise model building and editing.
- SPECTACULAR RENDERING:**
- Spotlights with intuitive pointing tools for dramatic lighting
 - Highlights, phasing shading, metallics and transparency.
 - Predefined materials include glass, stone, plastic chrome and gold.
 - Texture and reflection mapping.
 - Render EPS, TIFF and TGA high resolution (up to 8K x 8K) stills.
 - Import 2D still images (TIFF, TGA, BMP, PCX and GIF)

- DYNAMIC ANIMATION:**
- Hundreds of predefined animation paths including bounces, arcs, orbits, spirals, spins, zooms and bounces.
 - Batch Rendering allows multiple models and/or animations to be rendered unattended.
 - Adding smooth animated motion is an easy one-step process
 - Compound motion support (e.g. letters may spin while word flies in)
 - Fly-ins and fly-outs
 - Most animations render in 30 minutes or less
 - Outputs digital video FLCs and AVIs (Video for Windows)
 - Also outputs images frame by frame at a variety of resolutions, bit depths and formats. Supports field rendering for even greater smoothness or animated motion
 - Superblack provides support for luminance and chroma keying
 - NTSC and PAL color correction ensures "legal" video output
- Flying Fonts Pro 3.0 Windows.....** 89.95

Crystal 3D VORTEX Vol. 1 Digital Video Effects Software

Designed as a plug-in for Adobe Premier, Crystal 3D VORTEX includes over 25 professionally created, customizable, software-based 3D effects for use as transitions between source video clips.

- Created by professional animators and encapsulated into an easy-to-use 32-bit plug-in, each effect features custom output options like render quality settings, direction of the transition and lighting effects.
 - Based on award-winning technology from Crystal Graphics' TOPAS Professional, output is proven broadcast quality, supports both frames and fields and renders 2 to 3 times faster than most other 3D software.
 - Basic effects include 3D vertical, diagonal, horizontal, dual and quad spins as well as 3D page roll effects.
 - More innovative effects include a spinning globe effect where the screen flies around the earth and comes back with a different video clip on it; flying 3D slabs with personalized text and logos on the edge of the slab, and 3D "quake" and "shutter" effects.
- 3D Vortex Vol. 1.....** 149.95

Crystal 3D CD Enhance Your Videos and Animations With Over 75 Visually Stunning 3D Models

- Royalty-free models
 - Personalize your 3D models by easily changing their size, color, texture maps and orientation
 - Valuable for enhancing your videos, web sites, presentations, and print work
 - Ready to load, ready to render
 - Models included for holidays, sports, vehicles, interiors, musical instruments, office equipment, kitchen items
- 3D CD.....** 99.95

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NewTek LIGHTWAVE 3D 5.5

3D Rendering and Animation Software for Broadcast Graphics

LightWave 3D is the easy way to create the most sophisticated 3D animation imaginable. It's intuitive, complete, easy-to-use layout and modeling system deliver the ultimate in creative control, not to mention flexibility. Unparalleled features for modeling, surfacing, lighting and animating are right at your fingertips. Raytracing, motion blur, MetaMotion, inverse kinematics (IK), Bones, field rendering, lens flares, compositing - they're all here. And with OpenGL and Quickdraw 3D support you can see your creations in real time. Add a robust plug-in architecture, and it's no wonder you find LightWave 3D in more Hollywood animation suites than any other 3D program. LightWave 3D is available for almost all platforms: Windows 95, Windows NT, Power Mac, DEC Alpha, SGI and Sun Microsystems.

MODELER:

- **Open GL Support**
OpenGL supports real-time shaded views and displays many surface attributes. Preview objects as solid or see-through wire frames in the OpenGL preview window.
- **MetaNURBS**
MetaNURBS is an elegant and easy way to model objects by transforming polygonal models to NURBS surfaces in real time. MetaNURBS delivers incredible detail and flexibility, so you can create smooth organic objects even though the model is actually based on polygonal geometry.
- **Boolean Tools**
Boolean tools to cut, slice and combine objects. Take simple primitives, like spheres or cubes, and create complex shapes quickly and effortlessly.
- **Other Modeler Features**
• 3DMM Support on PowerMac • MetaBalls modeling plug-in • MetaForm2 plug-in • Surface editing directly in modeler • Randomization for bevel and array tools • Two way data sharing between layout and modeler • Hundreds of polygon modeling tools • Postscript and TrueType font compatibility

LAYOUT:

- **Interface (OpenGL Support)**
Who wants to wait to see what they've created? LightWave layout supports OpenGL and Quickdraw 3D so you can see objects, surfaces, composition and lighting in real time.
- **Interface (Textures)**
Realistic OpenGL preview of animations
Direct RenderGL support for faster rendering for output.
- **Animation Controls**
• Infinite layered surfaces, provides algorithmic textures plus image mapping. The result is a versatile tool for stacking image upon image as deep (or high) as you like. Create clothes with wrinkles, creases and ripples or make waves with layers and crests. Set variable levels of transparency.
- **Tiling and alpha channel options for texture maps**
- **Animate nearly all scene attributes through an easy key frame interface or with envelope controls**
- **Advanced motion controls, including spline controls, velocity, shifting and scaling**
- **Animate lights, lens flares, textures, objects, even camera attributes (zoom or depth of field)**. Lens flare controls allow streak rotations and other manipulation
- **Character Animation**
Inverse Kinematics (IK) accounts for all those linkages between say, a finger and an arm. IK automatically adjusts for the movement of all the linkages in-between without endless tinkering to create a realistic motion.
- **Morph Gizmo** - a quantum leap for character animation in general, and lip-synch in particular. With Morph Gizmo, you can visually morph an object between several targets - for example, a series of facial expressions or phonemes.
- **Rendering**
• Volumetric lighting engine lets you create ultra-realistic lighting effects.
• Inexhaustible list of lens and illumination effects.
• Built-in cel shader calculates shading and operates much faster than hand drawing
• Lens flare modes, including central ring color and size modifications and star filter enhancements
• Use realistic camera options such as focal length, depth of field and motion blur
• Control light attributes, including light type, color, intensity, falloff, lens flare, shadow options and more
• Create special effects such as an animated fog, image keying and particle blur, unaffected by fog opacity for objects
• Custom resolutions up to 8,000 by 8,000 pixels
- **User Interface Conveniences**
• Play mode enables you to view animations without creating a preview and make changes to an animation interactively while the scene is playing.
• Camera control provides direct input of camera lens focal length plus horizontal and vertical fields of view.
• Animatable modeling functions include twist, taper, bend, shear, vortex, and pole.
- **VRML-2 Support**
Supports the VRML 2 standard, making it a rock-solid choice for sizzling web sites. VRML supports everything from texture and sound to hierarchical animation and morphing - all directly from layout. An audio scrubbing feature keeps you in sync with the audio files.

Adobe AFTER EFFECTS 3.1

Post-Production Tool for Compositing, Motion Graphics and Special Effects on Windows and Macintosh

After Effects 3.1 is the industry standard for professional motion graphics created on Windows-based PCs or Macintosh. It provides the power and breadth of features required by film makers, video producers and editors, graphic designers, multimedia professionals and web developers to produce high-end, unlimited composites, fluid animations, and sophisticated special effects. Available for Macintosh and Windows, After Effects 3.1 is tightly integrated with the Adobe product family, so if you work with Premier, Photoshop, or Illustrator, you already have the skills, know-how, and hardware to make After Effects a seamless, powerful extension of your creative arsenal. Turn your computer into a motion-graphics studio and put awe-inspiring action into your work.

- SOPHISTICATED COMPOSITING:**
- Combine digitized materials from any source to create sophisticated composites and traveling mattes using transparency, complex masks and alpha channels. Animate Photoshop layers and Adobe Illustrator art with new direct import capabilities.
- SPECIAL EFFECTS:**
- After Effects lets you use plug-in effects ranging from precise color correction filters to wipes and blurs, and even Photoshop filters. You can also animate each effect independently over time.

- MOTION GRAPHICS:**
- Position and animate layers with unlimited keyframes and sub-pixel accuracy. View and edit your spline-based motion paths on-screen. Ensure super smooth motion at any speed with field-rendering and true motion blur.
- AFFORDABLE QUALITY:**
- With After Effects you can create anything you can imagine. Get top-quality motion graphics for film, broadcast or CD-ROM—at a fraction of the cost of a dedicated hardware system.



Adobe After Effects 3.0

Artel Boris Effects 3.1

A software-based multi-channel DVE generator, complete with intraframe interpolation, matte manipulation, and multiple keyframes, Boris Effects allows you to create your own custom moves. Boris ships with a keyframe library of over 150 customizable effects including cubes, picture-in-picture, chroma keying, blurring, soft edges, masks, filters and compositing of unlimited track of video and graphics. Effects can be saved or used with different video source clips. Easily create 3D flying logo effects from PICT, TIFF, bitmap, Video for Windows and QuickTime files using an embedded alpha channel. Other features include borders and drop shadows which can be colorized and made soft and translucent, control over camera position and light source with specular highlights. Based on a plug-in architecture, Boris is compatible and closely integrates into Adobe Premiere and After Effects. Media 100, Avid MCXpress, in-synch Speed Razor, FAST VM-Studio Plus and D-Video Online desktop non-linear editing systems. Once installed in your system, it appears in the transition list and is easily accessed from their transitions and filters menu. It is not a background application and no extra memory is required.

- Up to 65,000 tracks of video and graphics.
- Blur and bevel filters.
- Full control of image scale (size), positioning, depth and opacity.
- New 3D effects with depth control to create cubes or slabs with up to 6 different videos, pictures or colors on each of the 6 faces.
- Full manipulation of picture files with alpha channels to create logo fly-by or titling. Drop shadows with variable positioning, opacity, softness, color and distance.
- New camera and lighting track. Add keyframeable specular and ambient light to your effect.
- New cropping features with full softness control of the edges and blend for really smooth soft wipe type of effects.
- Variable pivot points for unique rotation control.
- Uses sub-pixel interpolation, field rendering and anti-aliasing for clean and smooth effects.
- Includes a free year of upgrades and full tech support!



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Seagate ST19101 Narrow/Wide 9.1GB Ultra Cheetah.....	Call
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CD Architect - Design and build CDs with speed and precision; write audio CDs directly from your PC; operates as a stand-alone editor or can be used as a plug-in for Sound Forge 4.0; supports PQ code editing and a full range of CD recorders; includes Sound Forge XP... **CD Architect.....249.00**

Sound Forge 4.0 - Professional sound editing for Windows; produce studio quality audio with an impressive set of effects, processes, and tools; expandable plug-in architecture supports DirectX Audio Plug-Ins...
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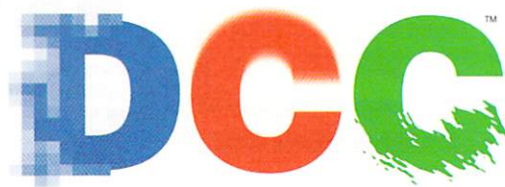
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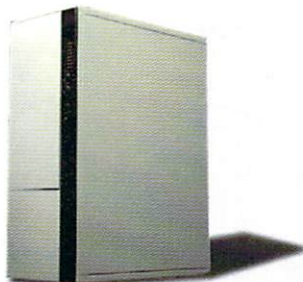
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Renderers

Continued from page 52



Nathan Devery—"Under Sea"

Software: LightWave 3D 5.0 and Fractal Design Painter

Description: The waves roll by above and the fish swim (as fish will do) while the weeds sway. I've been working the past five years at a national home shopping network creating 2D and 3D animations and graphics and I'm currently seeking employment, freelance or otherwise.

email: devery3D@aol.com

phone: (612) 470-4522



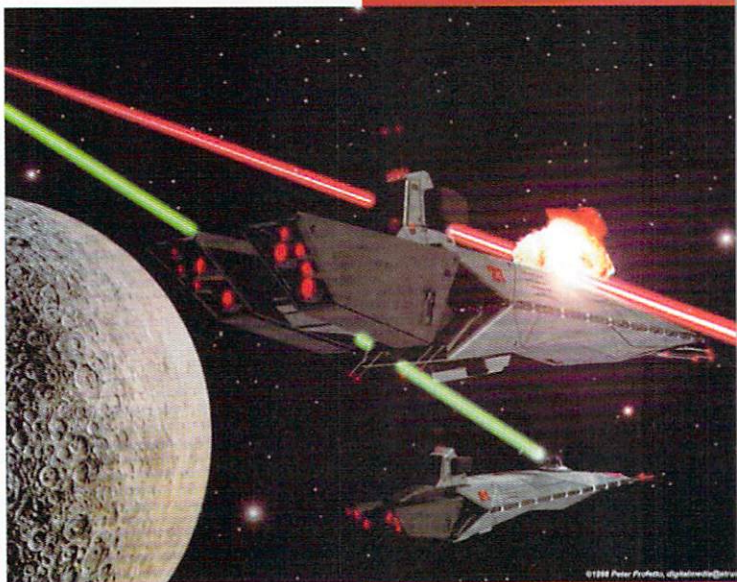
Burton Colter—"White Knight"

Software: LightWave 3D 5.0

Description: This was inspired after seeing the chess piece models included with LightWave.

email: proinfo@prodatta.com

phone: (204) 956-1468



Peter J. Profetto—"Surprise Attack"

Software: LightWave 3D 5.5

Description: The ship models, star scene with the moon, and lasers took only three days for me to create, composite, detail and lay out. It took 16 minutes to render on a Pentium Pro 200MHz computer.

email: digitalmedia@atrulove.net

phone: (718) 445-5834



Mike Alkan—"RV1"

Software: LightWave 3D 5.5 and Photoshop

Description: Concept vehicle designed within Modeler using MetaNURBS and surfacing accomplished with Gaffer

email: michael@tamcotec.com

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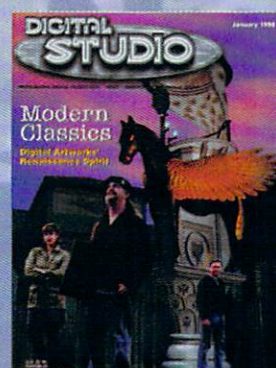
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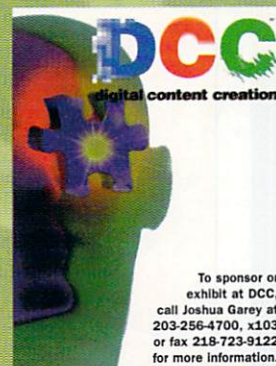
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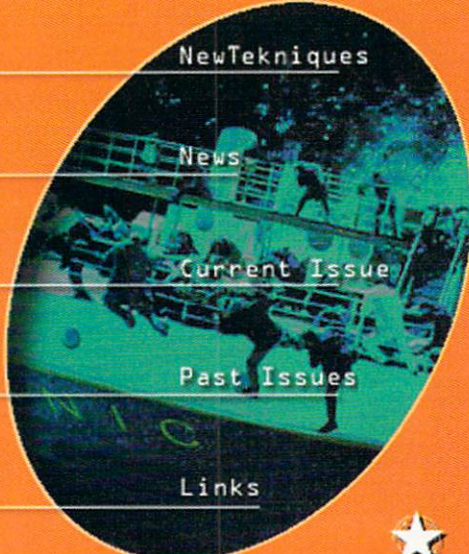
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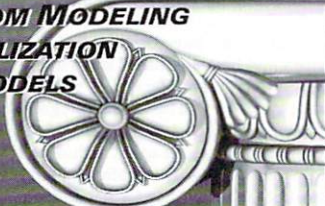
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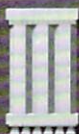
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MOJO

MUSINGS FROM OUR ACE LIGHTWAVE ANIMATOR



There's a lot of hungry animators and video hopefuls out there.

BY MOJO

Fat Elvis It's Hard to Stay Hungry on \$1,000 a Week

People are at their best when they've got something to prove. Elvis Presley started out poor and alone when he tried to bring rock 'n' roll to the world's attention. Between his day job as a truck driver and his nights devoted to tiny gigs for no money, he worked hard to pursue his dream. Even as he slowly began to achieve success, he had to continuously fight a public that hated the music and wanted to see him burn in Hell.

But Elvis stayed hungry and, before long, he became the biggest recording star the world had ever seen.

Then he got sidetracked and found himself making really stupid movies. He soon realized that being an actor wasn't what he wanted. He belonged at the center of the rock 'n' roll universe but he let it slip away. He had an easy life as a movie star—women, fame, and more money than he could ever spend.

But he had strayed from his path. He wasn't where he wanted to be and when his movie contract finally expired (after 10 years), he picked up his guitar and headed straight for the comeback trail. He needed to prove to a

world that had new rock icons that he was still the best.

He was hungry again

If you ever watch Elvis' famous 1968 comeback special, you'll see him at his peak. The man had a fire in him that set the world ablaze all over again. It was the proudest moment of his career and earned him the title he deserved—The King of Rock 'n' Roll.

It was all downhill from there

Once he had his crown, Elvis just sat on that throne and coasted through the rest of his life (nine years). Sure, he worked hard recording new songs and playing more concerts than anyone else probably ever had (or will); but his fire had gone out. His belly was

full and anytime he felt even the slightest touch of the hunger that started his career, someone handed him a cheeseburger.

I know there's a lot of hungry animators and video hopefuls out there. Despite my numerous warnings, many of you still want to work your way into Hollywood and hit the Big Time. I'm sure that those of you who avoid the cheeseburgers and keep the fire going will make it. But beware: Even if you stay clear of the career-killing burgers, fried chicken and mashed potatoes lurk behind other corners, waiting to pounce.

What does *that* mean?

There will come a point when you achieve success and life starts to get easier. You'll make a lot of money and probably have your name in the credits somewhere. You may make major contributions to movies and TV shows that will live on forever while your family and friends will be proud of you and you'll be the one who "made it" out of everyone else you knew growing up.

You might even be a little bit famous!

This is when the cheeseburgers start to creep in. I don't think

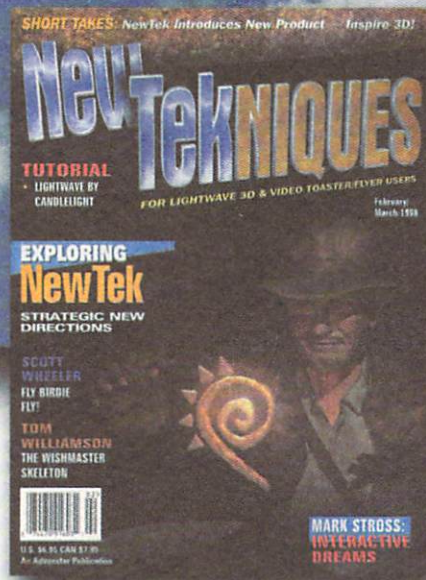
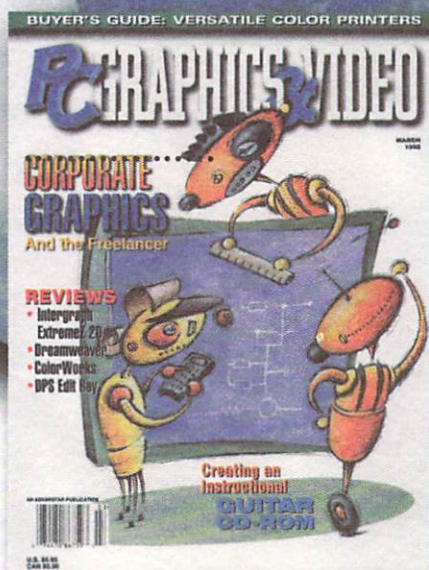
too many people out there *really* want to become superstar animators. You probably want to be writers or directors or have your own show or make your own movies—animating or making videos is just a stepping stone toward a greater goal. But when you achieve the success that I've described, it's a lot harder to stay hungry. It's easy to get lazy and fool yourself into believing that you *are* a success and, even if you stay right where you are, you'll die a happy man.

Of course, this is bull. You need to look past your fancy car, past your bank account, and past those cheeseburgers to the reason you started out in the first place. Sure, you've paid your dues and worked hard to get where you are and you have done better than so many others; but unless you are *exactly* where you want to be, doing what you dreamed of all those years ago, then it's all been a big, fat waste of time and the cheeseburgers will have won.

Mojo is a supervising animator at Foundation Imaging. He currently oversees the CGI for "Star Trek: Voyager."

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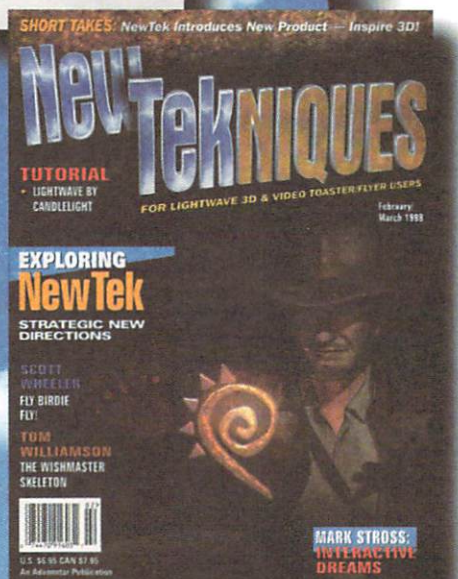
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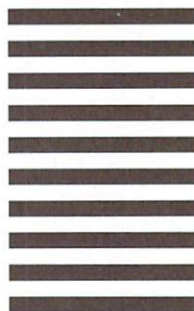
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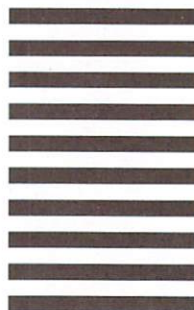
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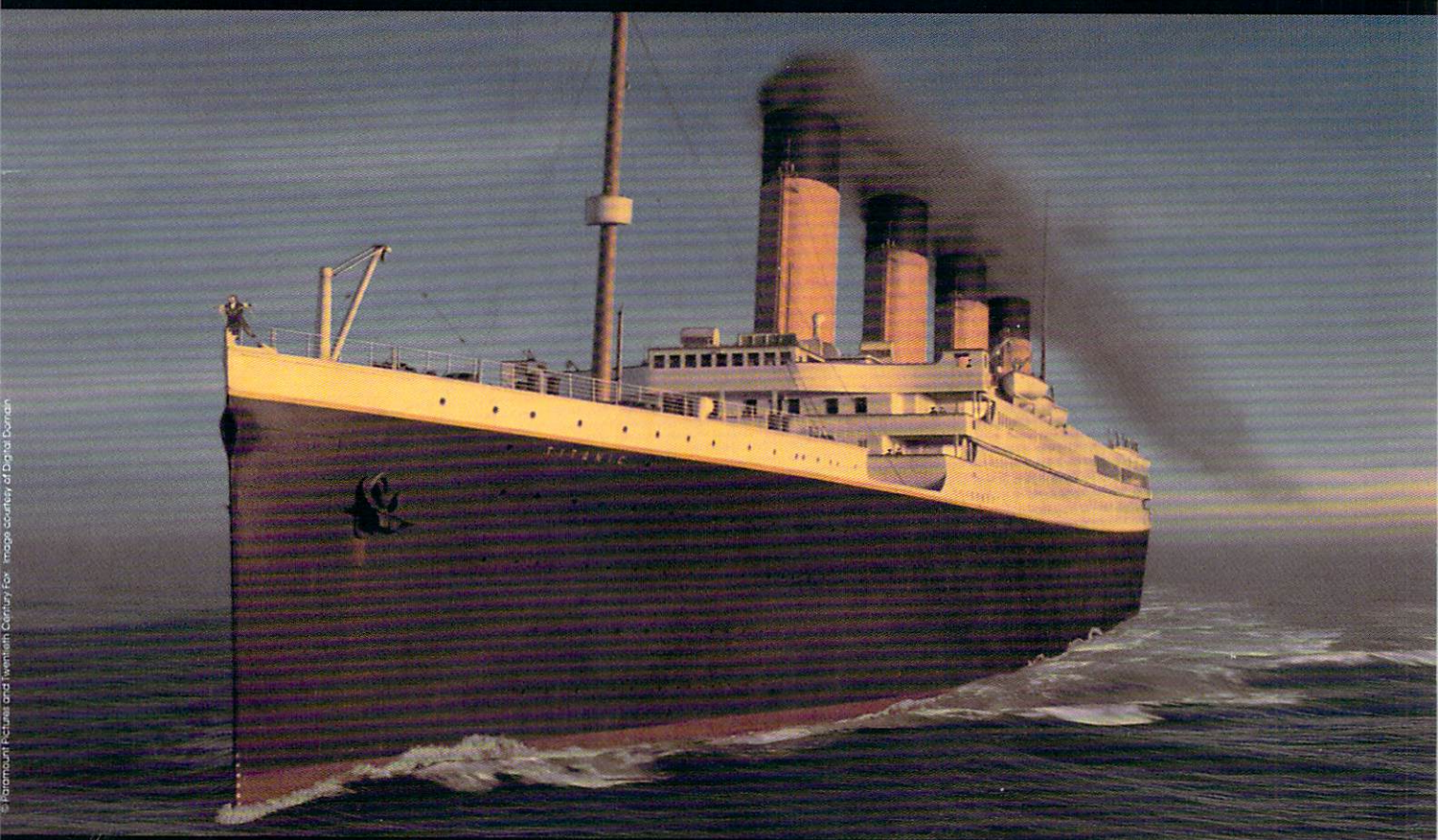
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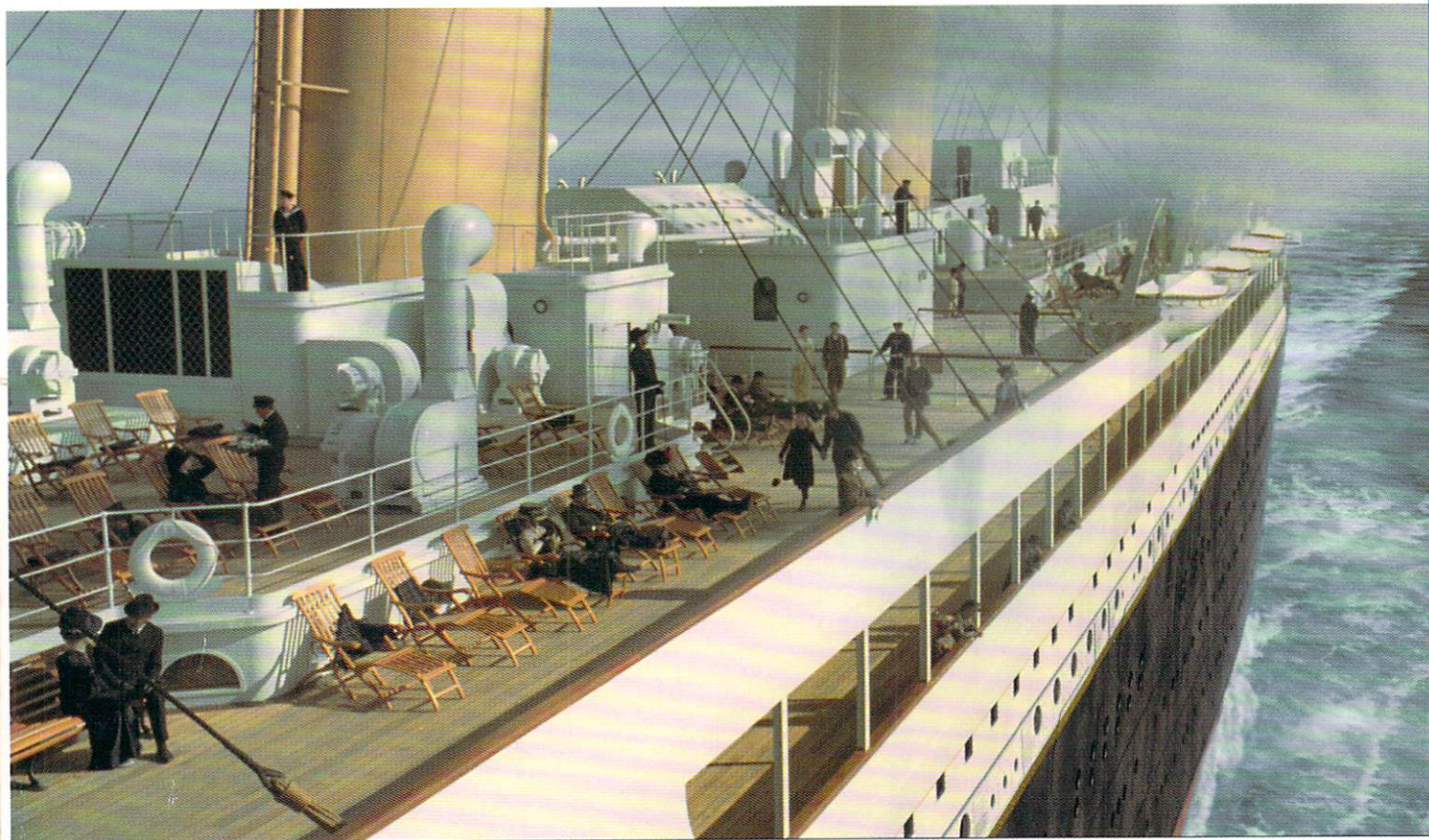
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// Titanic was big in every way. A big film. A big challenge. And, in the end, a big reward. But the trick with the animation was to achieve the look and result James Cameron was going for.

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With Titanic, we had a wonderful chance to tell a story...and with LightWave 3D, we had a great means of achieving that. **//**

*- Eduard Kummer, Vice-President of Digital Operations,
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